

LAMPHOUSE

RADIO CIRCUITS

31776

2/6

LAMPHOUSE

RADIO CIRCUITS

THIS book has been prepared in response to hundreds of inquiries which we receive for a publication containing a comprehensive range of Radio Circuits. All the circuits have appeared in the Lamphouse Annual or the "Radiogram," and readers who wish to keep up-to-date with their circuits should arrange to obtain the "Radiogram" publication regularly. (See advertisement elsewhere.)

In selecting the circuits, we have endeavoured to include the best of each type, no matter from where the circuit originated. Where possible credit has been given when a circuit originates from any other publication than our own, and if there have been any omissions in our acknowledgments in this respect, it is unintentional.

We hope you find this book of interest and service.

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again—no time to worry
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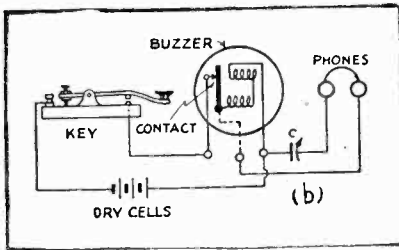
11 MANNERS STREET

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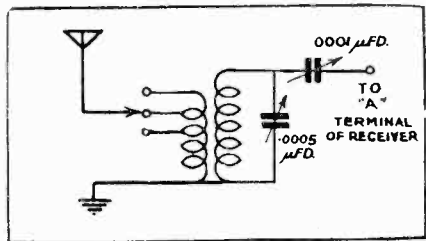
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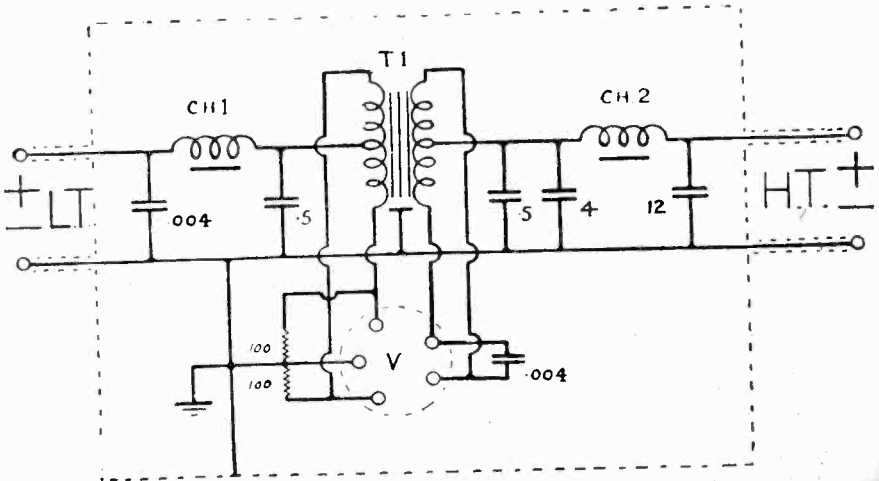
SUNDRY CIRCUITS, ETC.



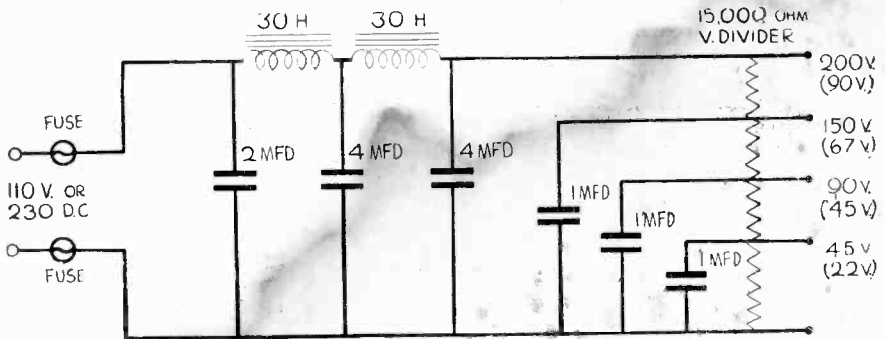
CIRCUIT FOR BUZZER.



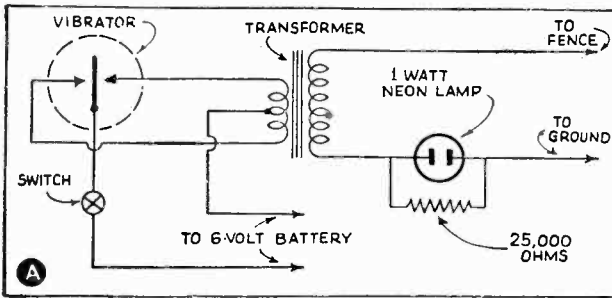
This selectivity unit sharpens up tuning considerably, without cutting down signal strength.



CIRCUIT FOR VIBRATOR UNIT.

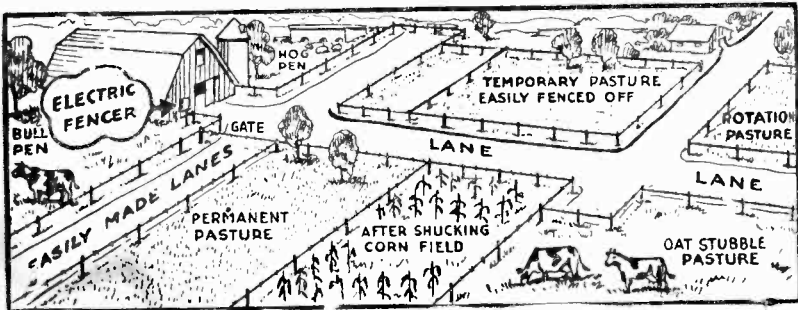
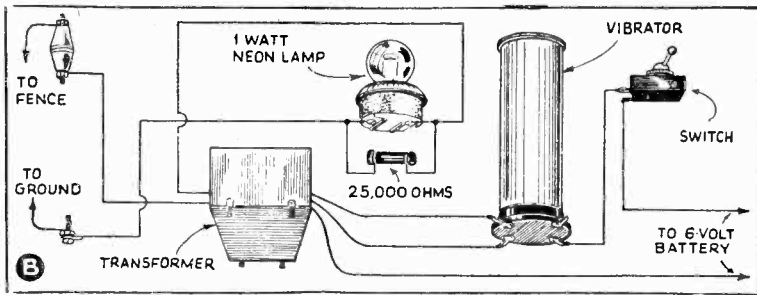


D.C. ELIMINATOR CIRCUIT.



ELECTRIC
FENCE
UNIT.
M. N. BEITMAN.

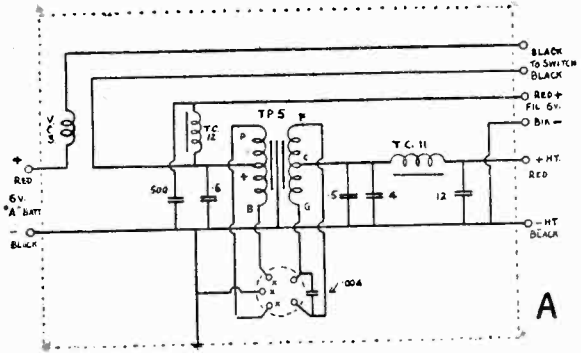
From
"Radio Craft,"
U.S.A.



MAKING GATE.

All that is needed is a simple wire connected to the Electric Fence Wire and stretched between the gate posts. Place a hook at one end so you can easily attach wire securely back to your Electric Fence. A piece of rubber tubing at the end to be detached enables you to open the "gate" without receiving a shock.

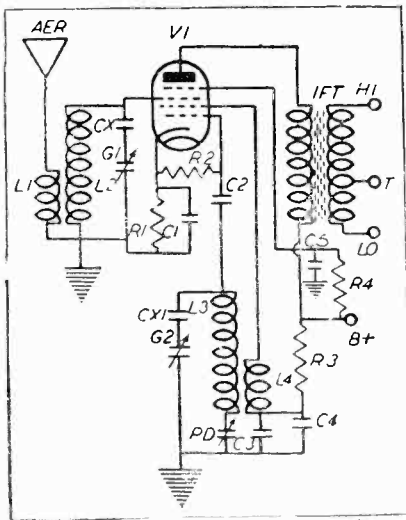
R.C.S. VIBRATOR UNIT.



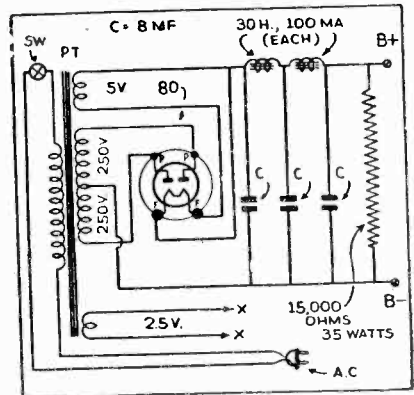
Below—

DAVENTRY SHORT WAVE CONVERTER.

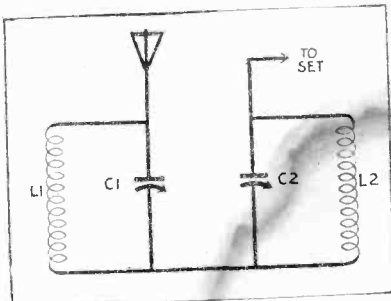
Schematic Diagram



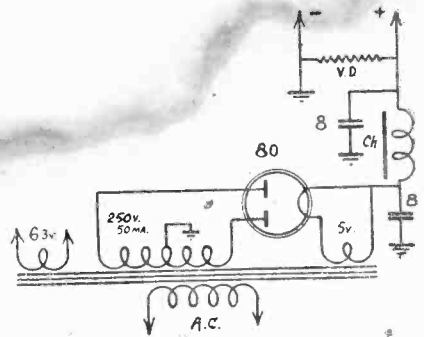
A Simple Shortwave Converter.



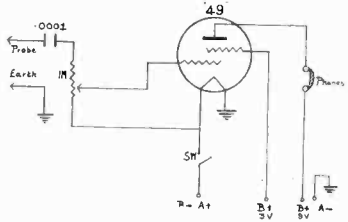
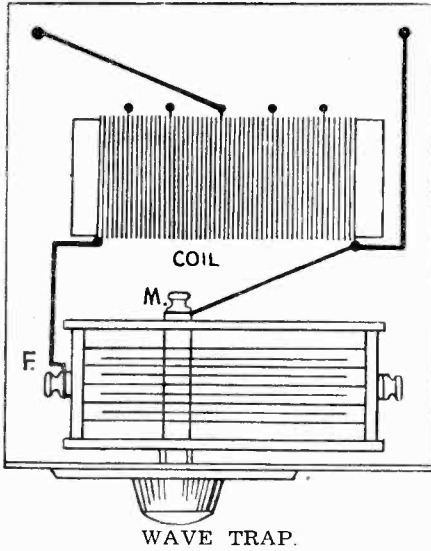
POWER PACK FOR SHORTWAVE SETS.



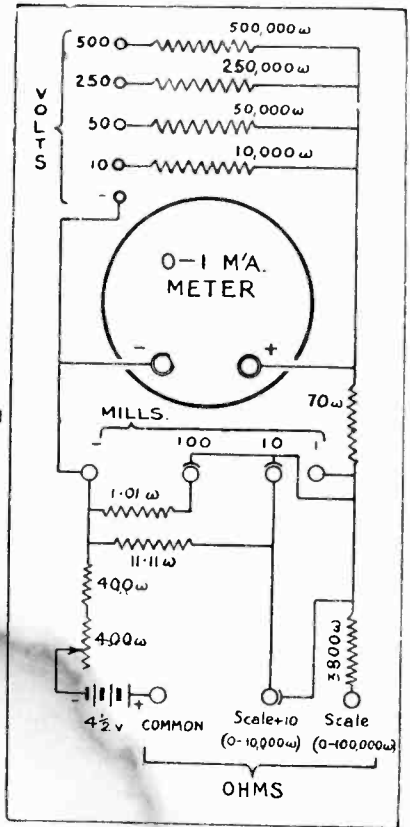
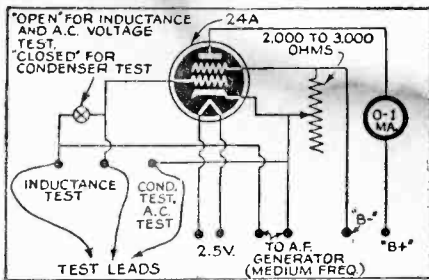
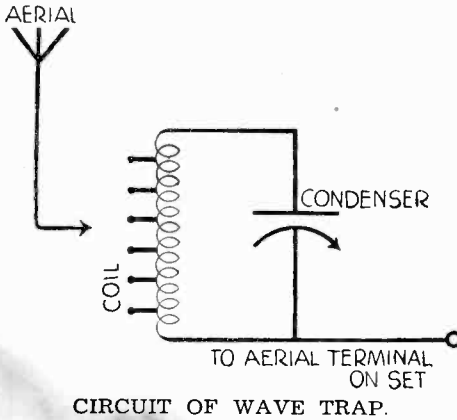
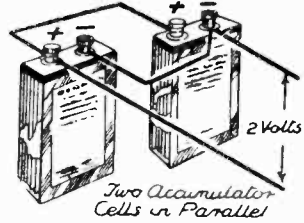
CIRCUIT OF THE DOUBLE WAVE TRAP.



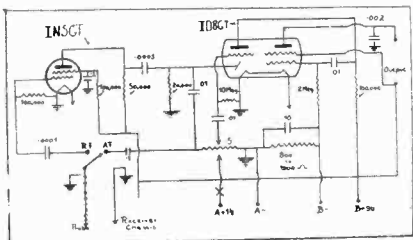
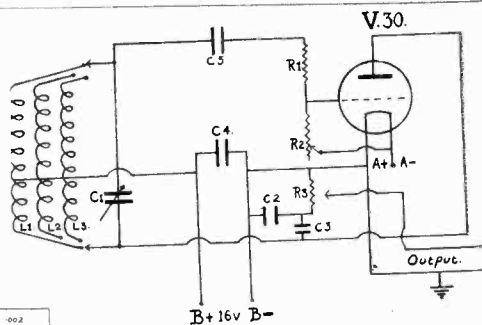
CIRCUIT OF A.C. POWER PACK.



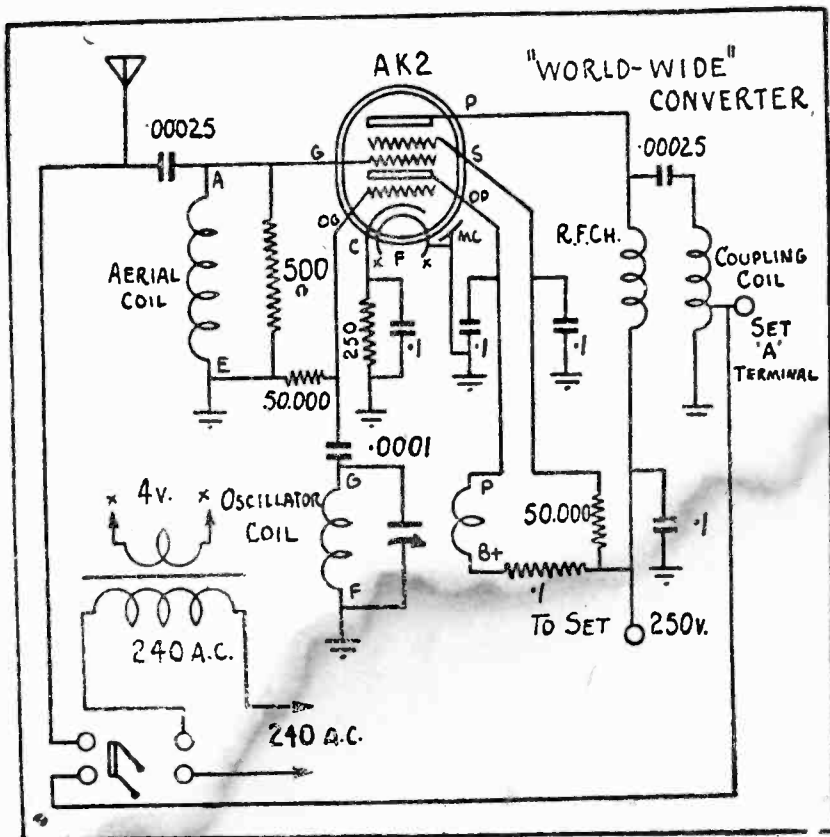
SIGNAL TRACER.



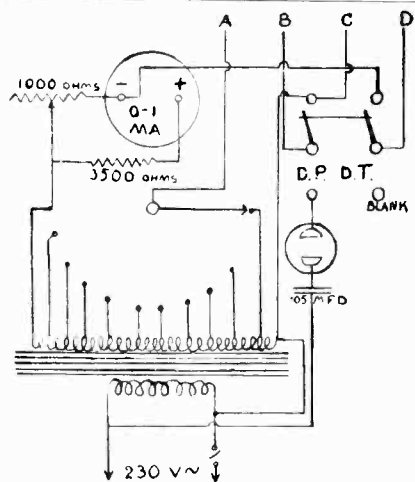
SIGNAL GENERATOR.



SIGNAL TRACER.

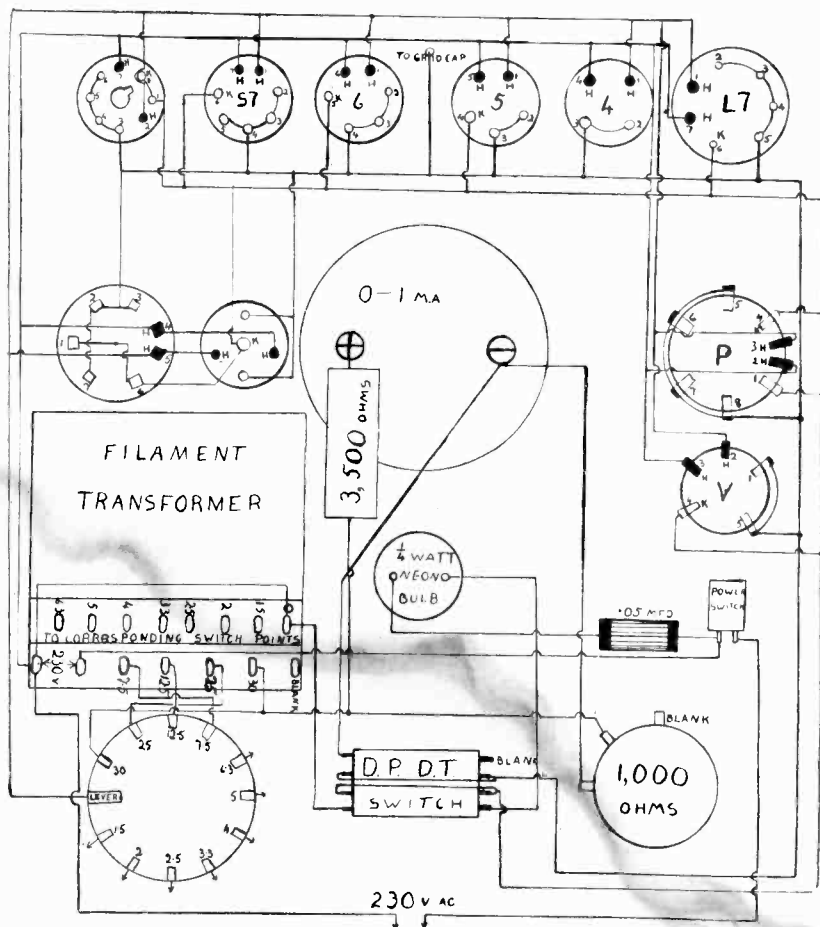


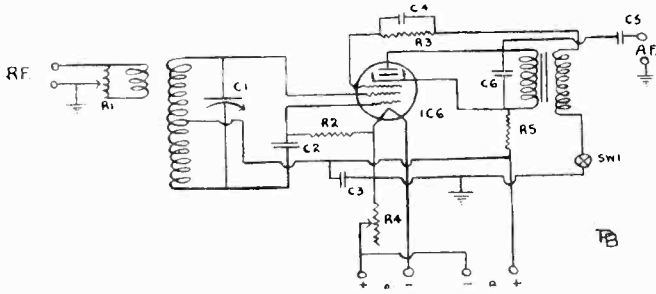
R.C.S. CONVERTER CIRCUIT.



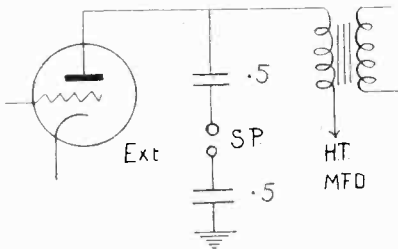
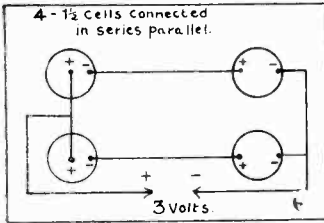
ECONOMY VALVE TESTER.
Schematic Diagram.

Below—WIRING DIAGRAM
ECONOMY VALVE TESTER.

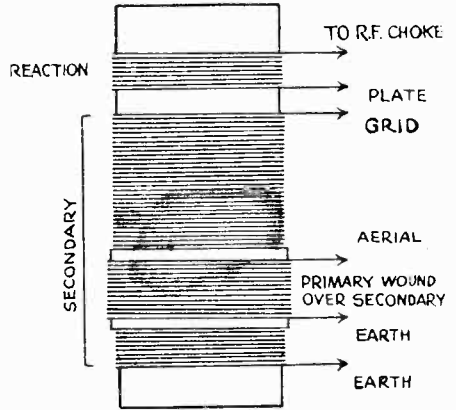




SERVICE OSCILLATOR.



EXTENSION SPEAKER CONNECTION.



STANDARD COIL SHOWING CONNECTIONS

CIRCUIT OF SET TESTER

From "Radio Craft."

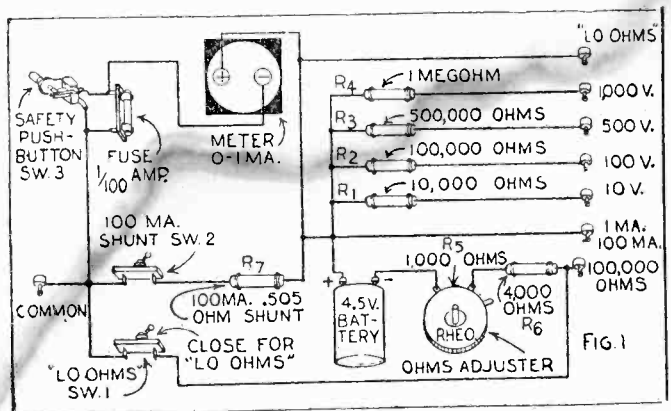
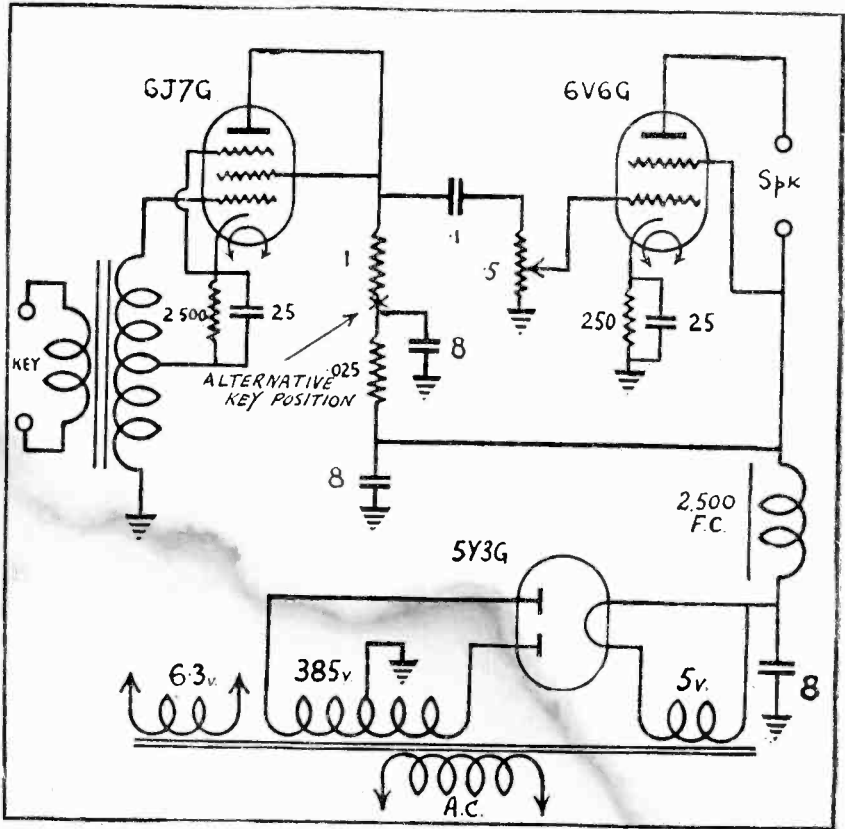
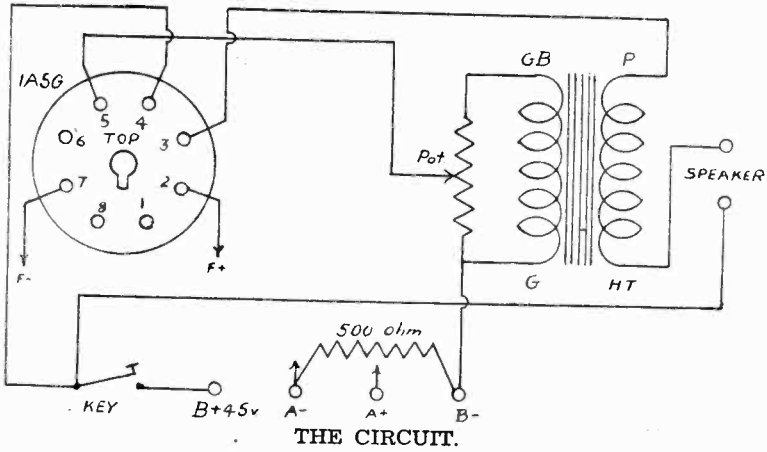
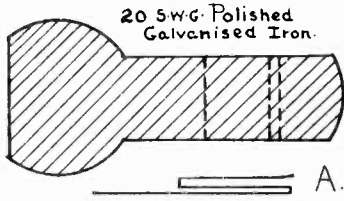


FIG. 1

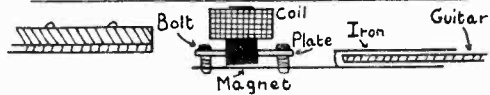
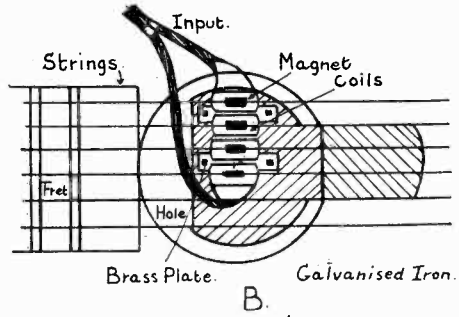
OSCILLATOR FOR USE WITH SPEAKER.
Uses 1A5G Valve.



ELECTRIC GUITAR.



$\frac{1}{2}$ Scale Approx.

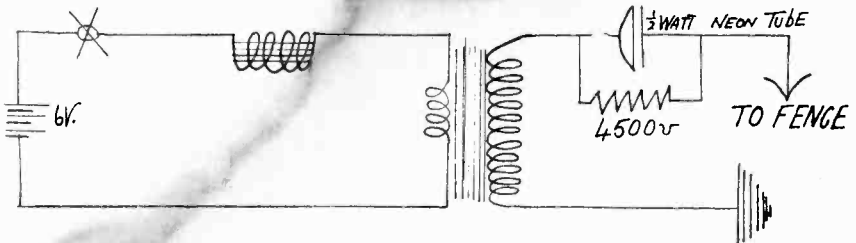
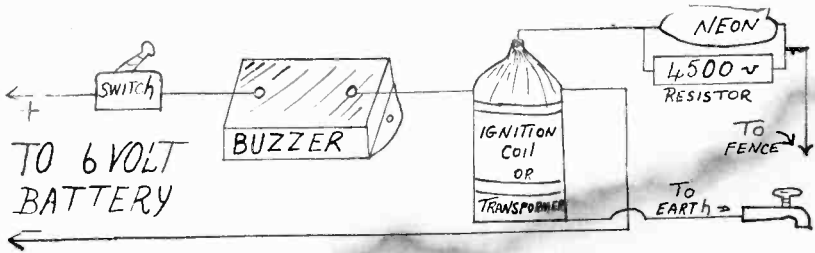


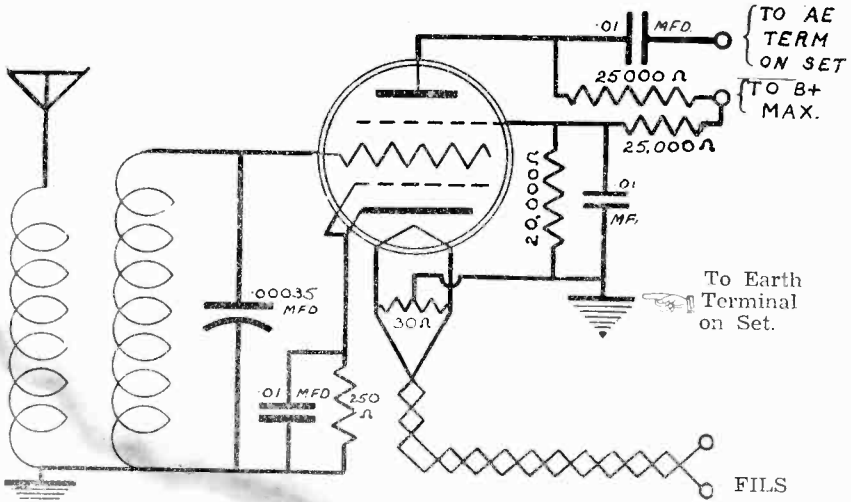
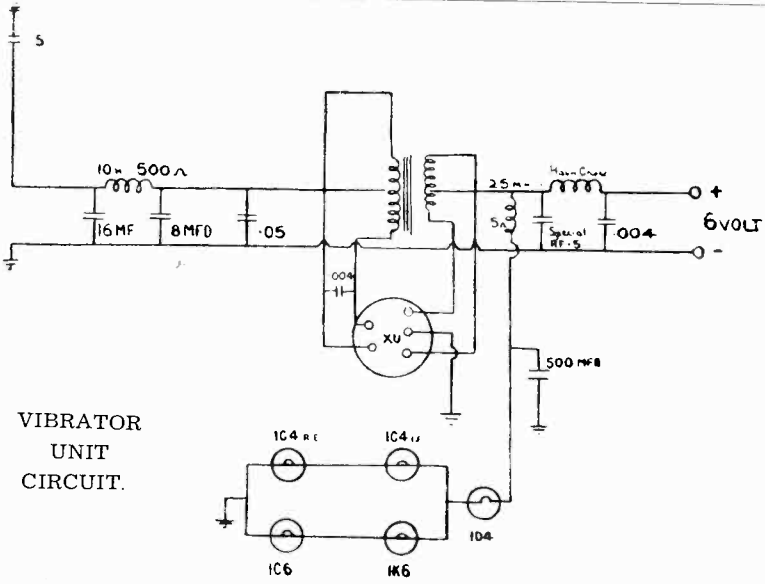
If any Rahob plays a guitar, here is a cheap pick-up, which I am using. Much fun can be had playing an electric guitar, and it will be well worth your while making it. I have played with a commercial steel guitar pick-up, and I find that my pick-up is just as sensitive to the high notes, and the volume is quite loud, when played through a radio.

Get a pair of earphones, and remove the outer covering and diaphragm. Keep the small brass bar and bolts, which hold the small horseshoe magnets in place. Take a piece of about 20 s.w.g. polished galvanised iron, and cut and bend it to the shape shown in diagram A above.

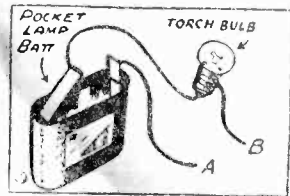
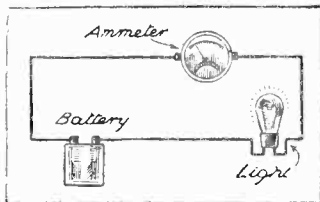
Bore four small holes to take the bolts in such a position that the pole ends of the small magnets come directly under the steel strings as in diagram B. One pair of earphones covers four strings, and as I play an Hawaiian guitar the top four strings are the most important. Place the galvanised iron on the guitar with a piece of paper under it, so as not to scratch the varnish, and screw the magnets and coils in place. A small piece of paper or cardboard can be put under the magnets to pack them up, so that the poles are within about $\frac{1}{8}$ inch from the strings.—Rahob 6756.

CHEAP ELECTRIC FENCE.

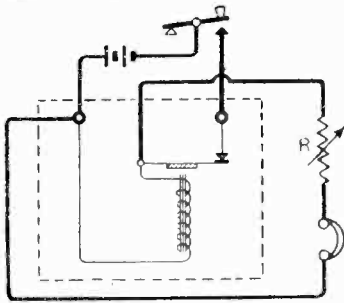




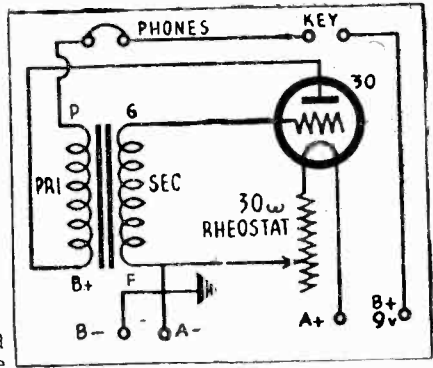
ADD-A-VALVE—Increases distance-getting and selectivity.



Using Battery and Lamp for CONTINUITY TESTING.

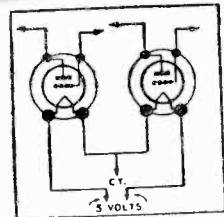
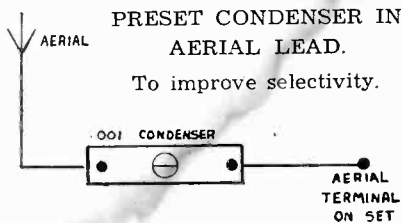
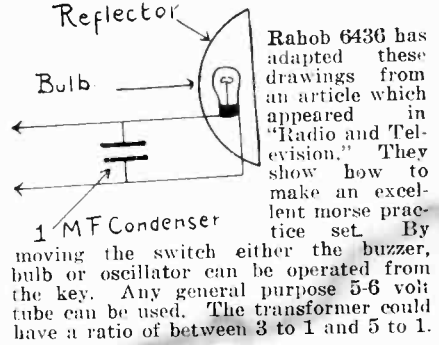
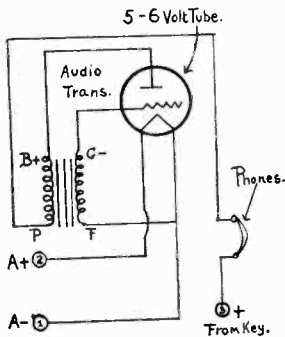
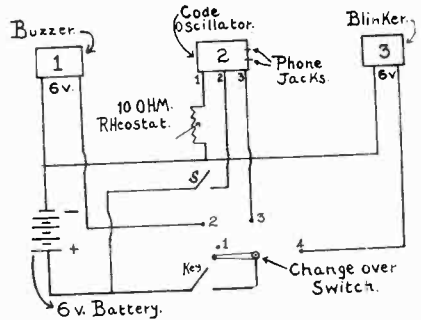
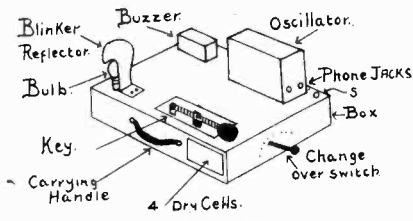


A BUZZER PRACTICE SET.
Showing connections of keys and phones. The internal wiring of the Buzzer is shown in fine lines.



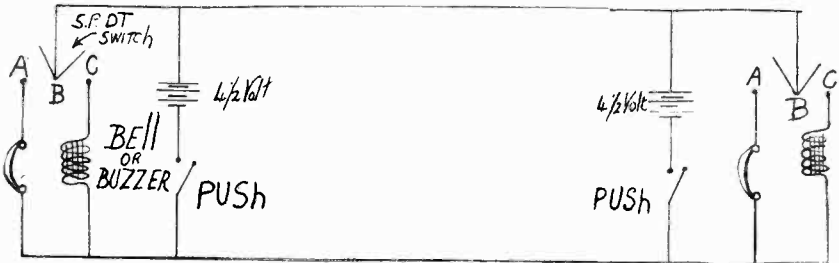
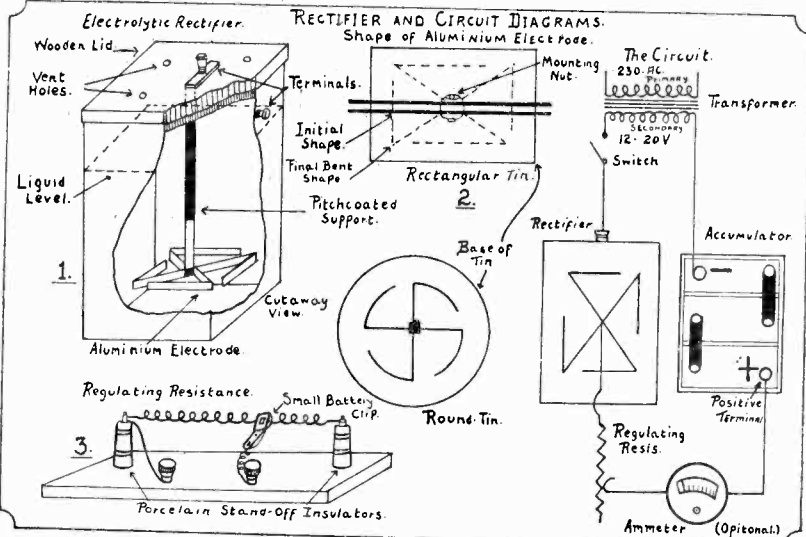
MORSE CODE OSCILLATOR.

THREE-WAY CODE PRACTICE SET



Showing how a 5-volt winding can be used in conjunction with 2.5-volt type valves.

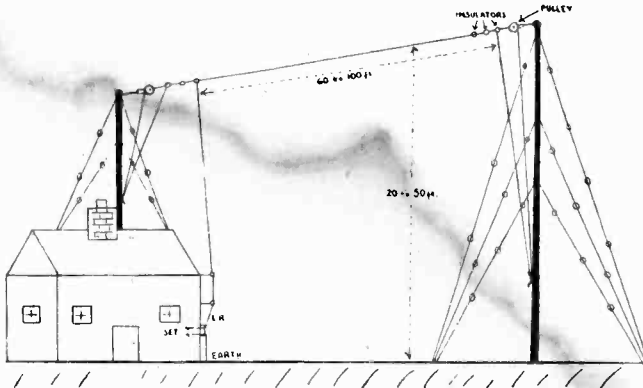
AN INEXPENSIVE TRICKLE CHARGER.



TELEPHONE CIRCUIT.

This telephone circuit shows how with headphones and buzzers a two-way telephone system can be made. It will work quite effectively over short distances.

When not in use the switch is left at C; when speaking at A and when ringing at B, one ear-piece is used as a microphone.



SUGGESTED L AERIAL INSTALLATION.

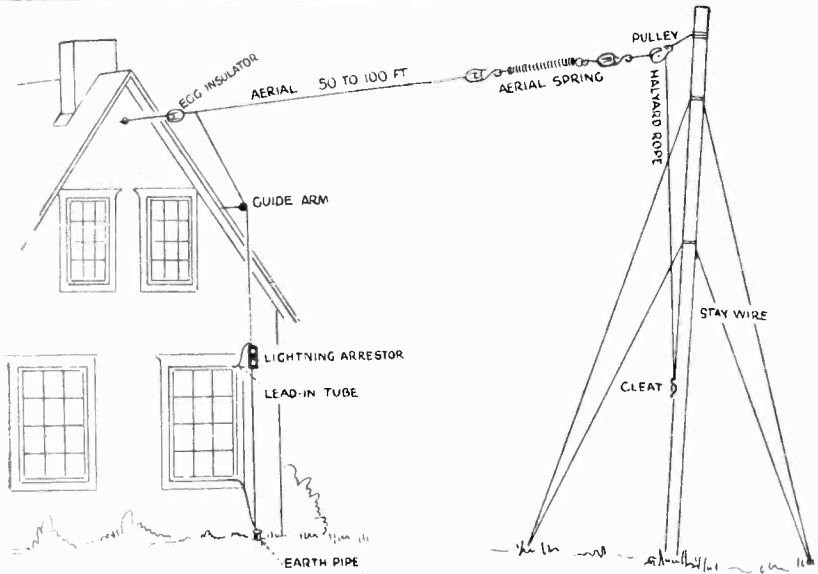
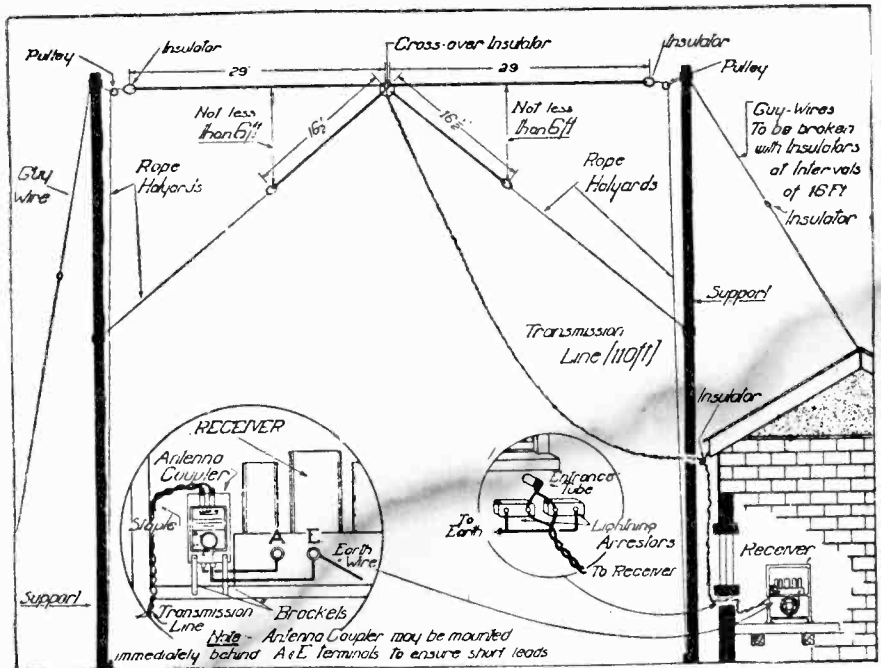
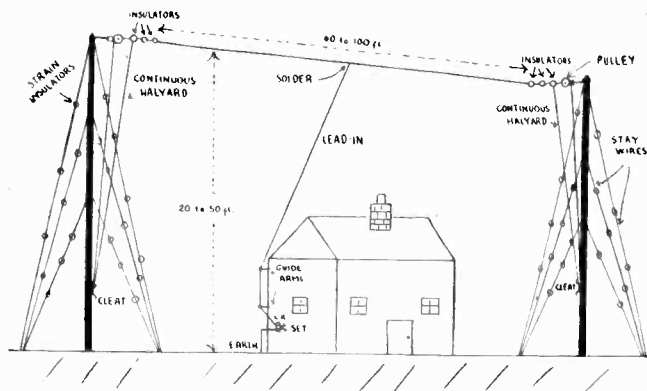


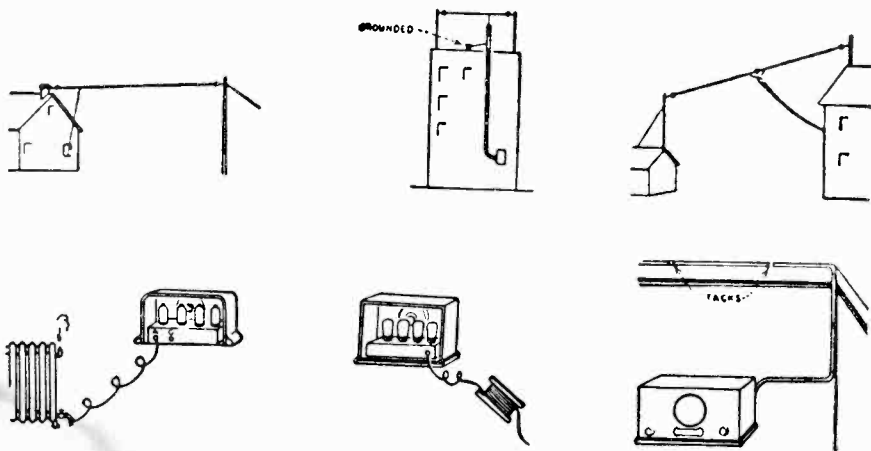
ILLUSTRATION OF GOOD AERIAL INSTALLATION.



THE DOUBLE DOUBLET AERIAL.
(Excellent for All Wave Reception.)



SUGGESTED T AERIAL INSTALLATION.



"NO RADIO CAN BE BETTER THAN ITS AERIAL."

A.—Ordinary Outdoor System.—Excellent on both broadcast and shortwave bands when building and vicinity are electrically quiet. Recommended for homes away from trolley-lines, high-tension wires, motors and busy roads.

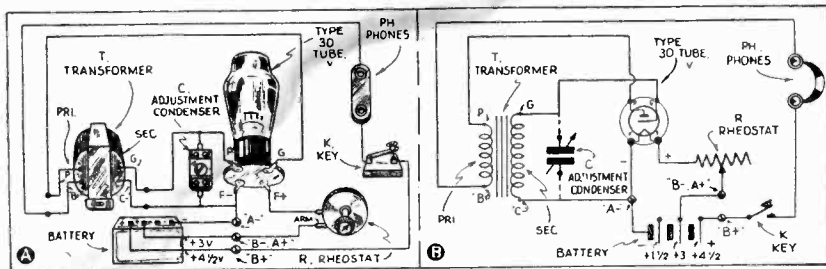
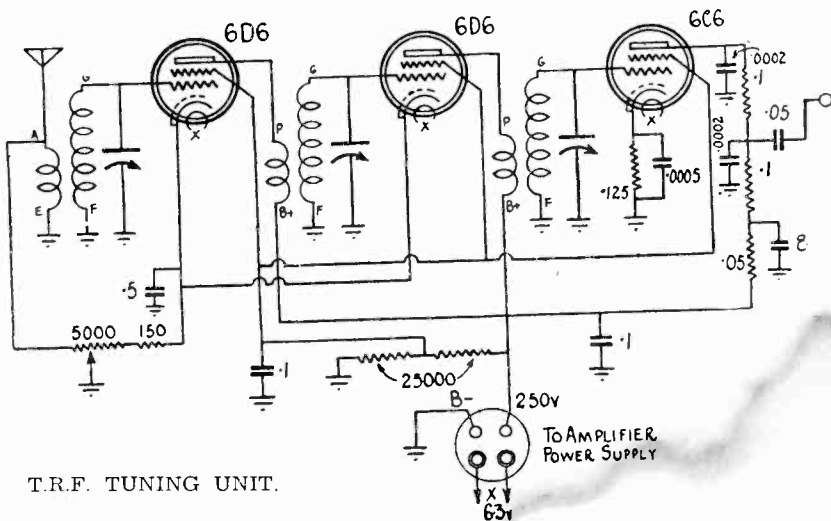
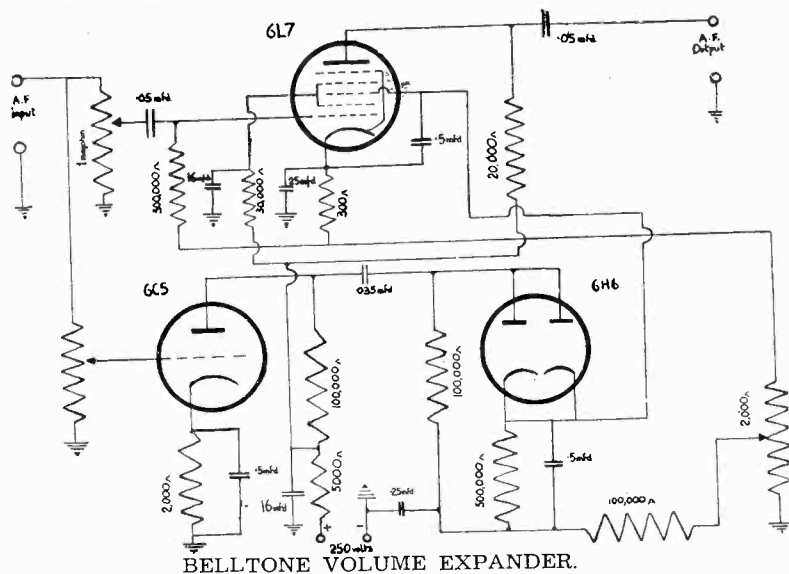
B.—Shielded Lead-in—Reduce noise pick-up by downlead where this wire must pass through electrically disturbed areas. Good reception on broadcast band but not recommended for shortwaves. In common with other noise-reducing types, must have aerial proper mounted out of noisy area for maximum benefit.

C.—Simple Doublet—Reduces noisy pickup by downlead where it must pass through noisy areas. Good reception on shortwave band and satisfactory for broadcast reception. Especially efficient at certain frequencies, which may be those most often desired.

D.—Ground as Aerial—Fair reception on local broadcast stations in some homes. Seldom satisfactory in suburban areas and useless for short-waves. Use only where other systems cannot readily be installed, or for temporary service.

E.—Built-in Wire—Good reception on local broadcast stations in all but extremely noisy buildings. Receives reasonably distant stations when used on upper floors in electrically quiet areas. Rarely effective on shortwaves and invariably noisy in large apartment houses.

F.—Moulding-Strip—Good reception on local broadcast stations in all but extremely noisy buildings. Receives reasonably distant stations when used on upper floors in electrically quiet areas. Rarely effective on shortwaves and invariably noisy in large apartment houses.



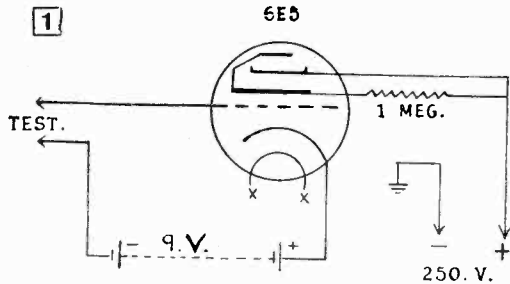
USEFUL MAGIC EYE CIRCUITS

CATHODE RAY TUNING EYE CIRCUITS.

(By GORDON W. READ.)

INSULATION TESTER.

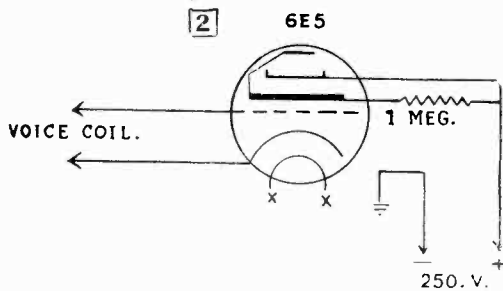
Circuit (1): This circuit uses a magic eye as an indicator for measuring the resistance of the insulation of a circuit. It is very important to use high grade parts in the grid circuit as the eye is very sensitive to leakage. The tube is hooked up, and the two test prods are connected to the object whose insulation is to be tested. If the shadow pattern closes, it is an indication that the insulation is poor, but if the shadow remains open, the insulation is good.



When using the device for continuity tests, if the continuity is O.K., the shadow pattern should close up.

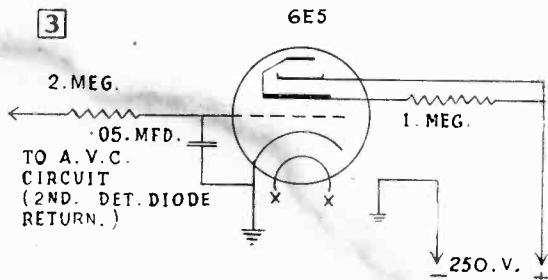
OUTPUT METER.

Circuit (2): The 6E5 makes a splendid output indicator for alignment of radio receivers by connecting two leads from the grid and cathode to the output transformer in place of, or across, the voice call. The same circuit as figure one can be used by omitting the 9V.C. battery and running a test lead direct to the cathode.



TUNING INDICATOR.

Circuit (3): A magic eye may be connected into any super-heterodyne receiver employing a diode second detector and A.V.C. The grid lead of the 6E5 is connected through a 2 megohm resistor to the second detector diode return. If the eye should close so close that the shadow overlaps it will be necessary to connect a resistor between the grid and



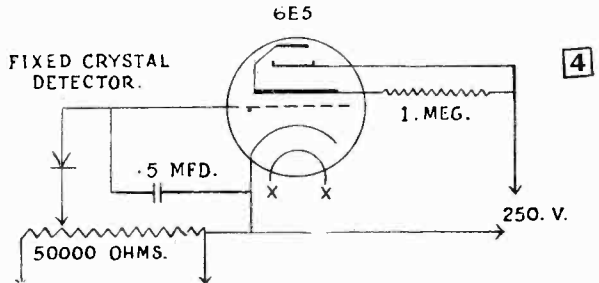
cathode of the eye tube. This limiting resistor value generally falls between 0.1 megohm and 2 megohm.

CATHODE RAY TUNING EYE CIRCUITS.

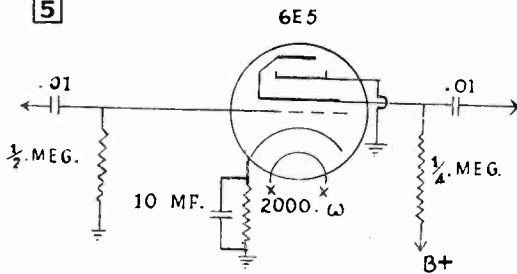
(By GORDON W. READ.)

VISUAL VOLUME INDICATOR.

Circuit (4): In this circuit a magic eye is used to indicate the power applied to a remote speaker. The 50,000 ohm. potentiometer is connected across the voice coil and the signal picked up by the moving arm is rectified by the crystal detector and applied to the grid.



5

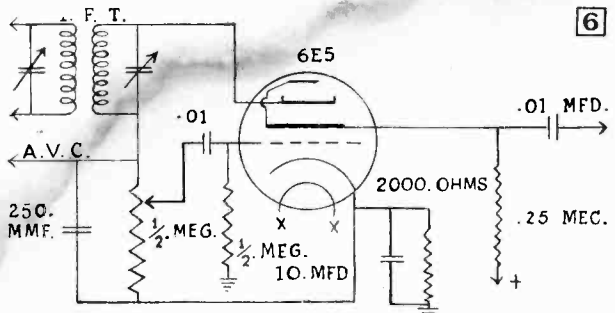


AUDIO AMPLIFIER.

Circuit (5): An old magic eye that has a triode section that tests O.K. can be used as an audio amplifier. Tubes used in this manner have quite a bit of gain. The target should be grounded when it is not used.

SECOND DETECTOR.

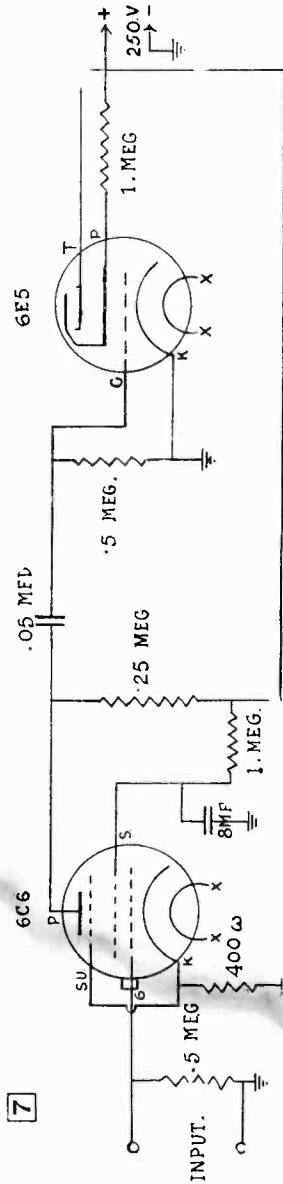
Circuit (6): By using the target as a diode the 6E5 makes a good second detector. The A.V.C. voltage is taken from the high side of the 1/2 meg. potentiometer which is used as a load resistor.



CATHODE RAY TUNING EYE CIRCUITS.

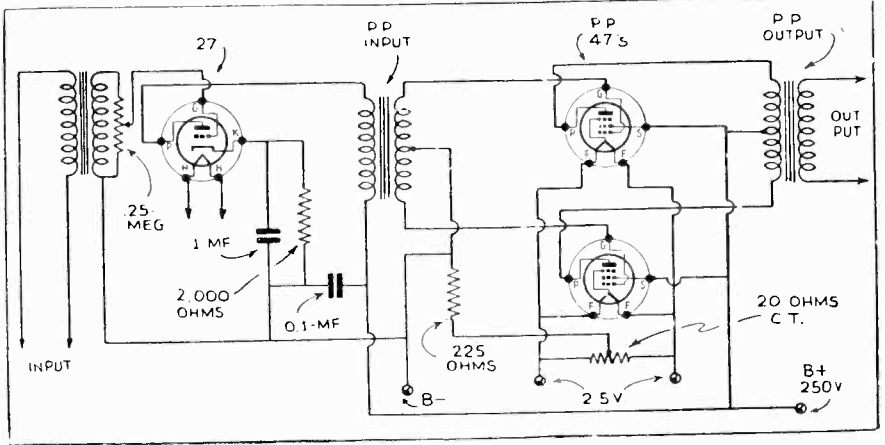
(By GORDON W. READ.)

RESISTANCE AND CAPACITY BRIDGE NULL INDICATOR.



Circuit (7): A null indicator for the resistance capacity bridge described in the 1941 Lamphouse Annual can be assembled by following the circuit diagram No. 7. It uses one stage of resist-

ance coupled amplification which makes it very sensitive. The two input leads are connected to the two headphone terminals. The eye opens when the bridge is balanced.



PUSH PULL 47 AMPLIFIER.

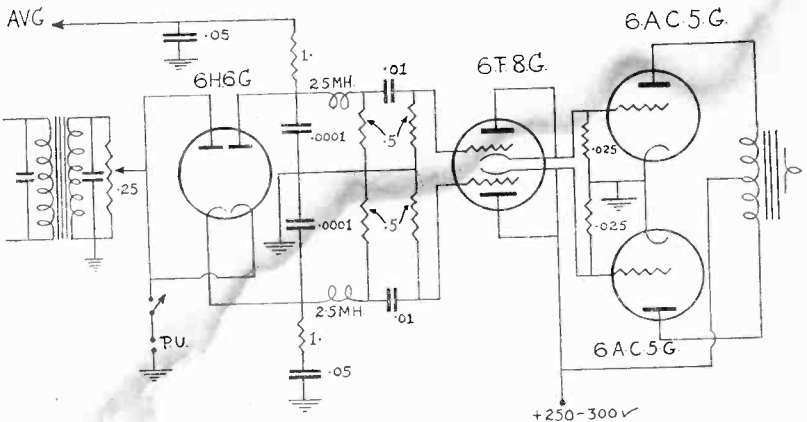
I have here a circuit which may prove of interest. It is an idea for a voltage-doubling diode second detector. Here it is:

The 6H6, in this case, performs the quadruple function of second detector, A.V.C. generator, phase inverter and voltage doubler. I have drawn the A.V.C. lead as coming from the plate of diode two, and passing through a 1 meg. resistor by-passed by a .05 mfd. condenser. This condenser is actually in the tuned circuit of the r.f. stage.

To balance the effect of this network, a similar combination is connected to the cathode of diode one.

I have drawn the last two stages of the Belltone amplifier on to my circuit, as it seems to me that this would result in a circuit having high fidelity.

However, there might not be enough gain, in which case a LC8G or a 8SC7 or, for the matter of that, the original 6N7G could be inserted between the 6H6G and the 6F8G.—Rahob 6535.



STANDARD RADIO SYMBOLS as used in "Radiogram" Circuits



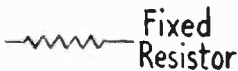
Aerial



Earth



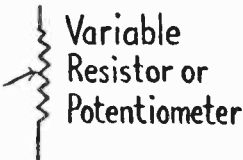
Fixed Condenser



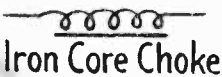
Fixed Resistor



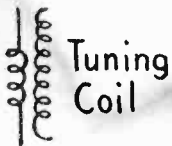
Variable Condenser



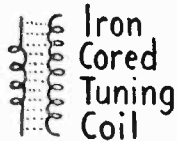
Variable Resistor or Potentiometer



Iron Core Choke



Tuning Coil



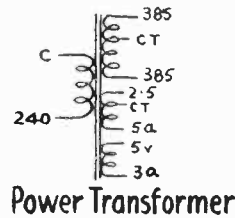
Iron Cored Tuning Coil



Terminal



Audio Transformer



Power Transformer



R. F. Choke



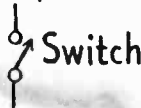
Battery Fuse



Crystal Detector



Headphones



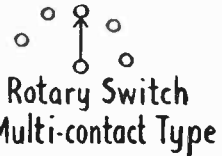
Switch



Wires Joined



Wires Crossed



Rotary Switch Multi-contact Type



Differential Condenser

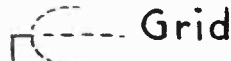


Loudspeaker

VALVE ELEMENTS



Plate



Grid



Filament



Heater



Cathode

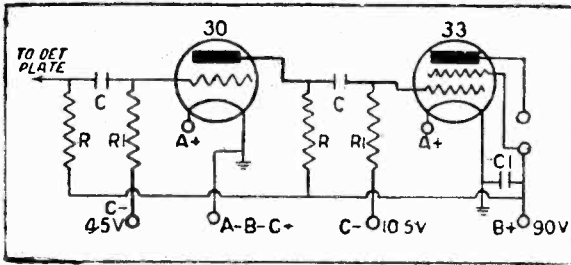


Diode Plates



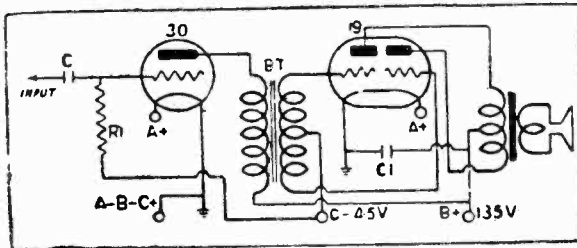
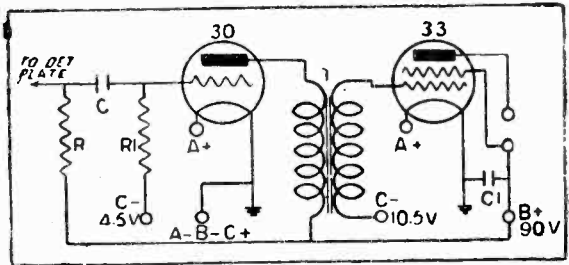
Screen Grid

AMPLIFIER CIRCUITS

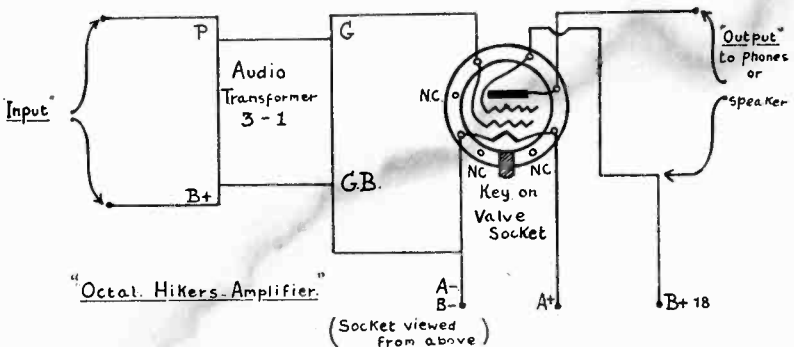


THREE CIRCUITS OF
2-VALVE BATTERY
AMPLIFIERS.

"Listener In" Circuits.



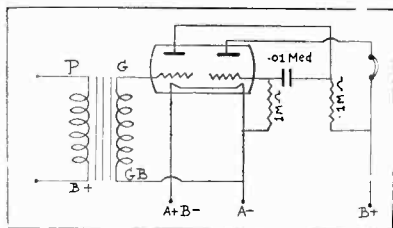
1C5G. or 1Q5C.



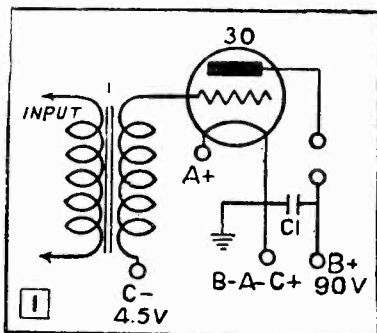
OCTAL HIKERS' AMPLIFIER.

AMPLIFIER.

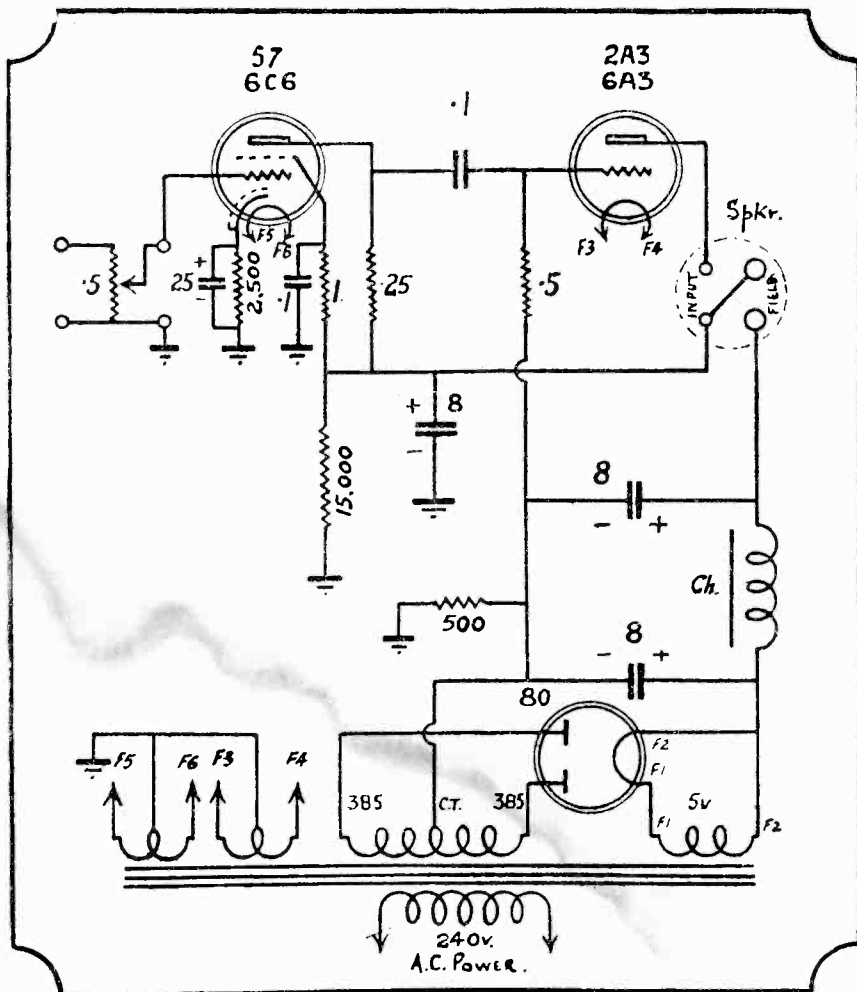
Using Type 19 Valve and Ordinary Audio Transformer.



Below—SWING AMPLIFIER CIRCUIT.

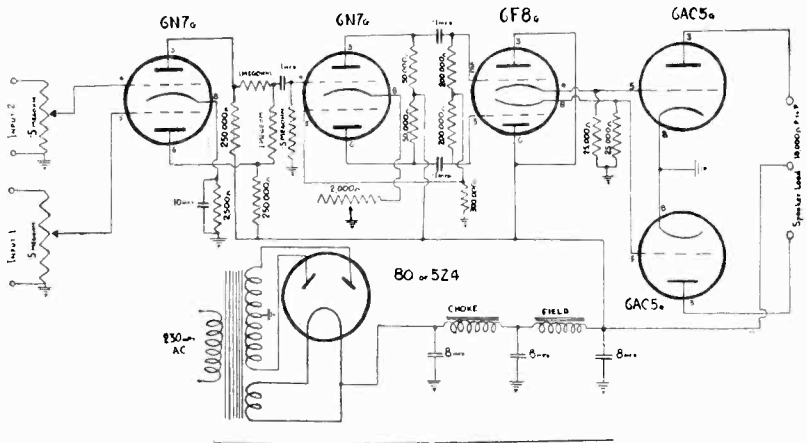


SINGLE VALVE BATTERY AMPLIFIER.

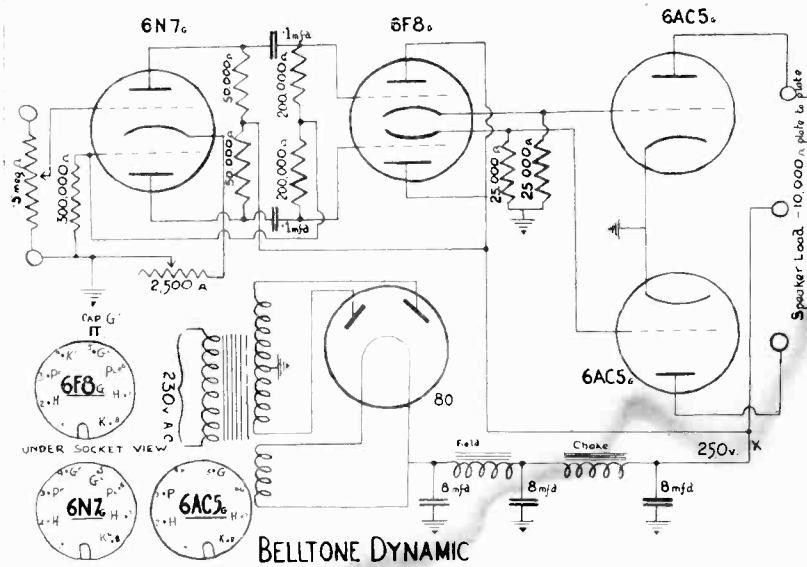


Circuit showing also the correct method of fitting a volume control if one is not already embodied in the pick-up.

THE SUPER BELLTONE AMPLIFIER.
With Two-Channel Audio Mixer.

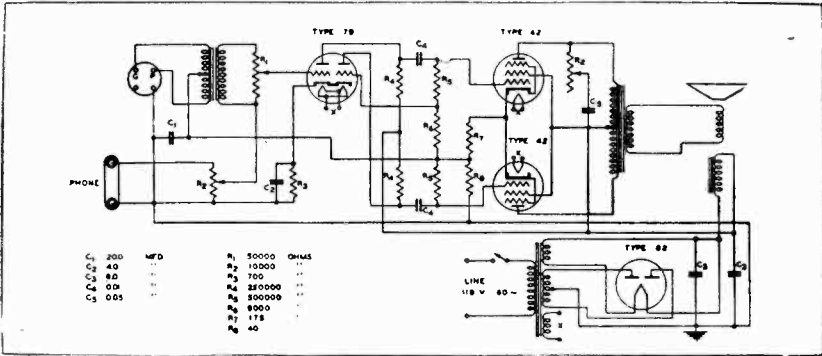


BELLTONE DYNAMIC AMPLIFIER.

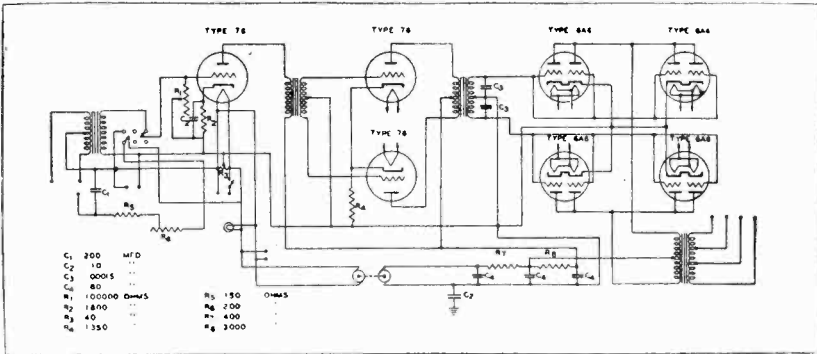


For Good Radio Fun—and Reading—
Join THE RADIO HOBBIES CLUB

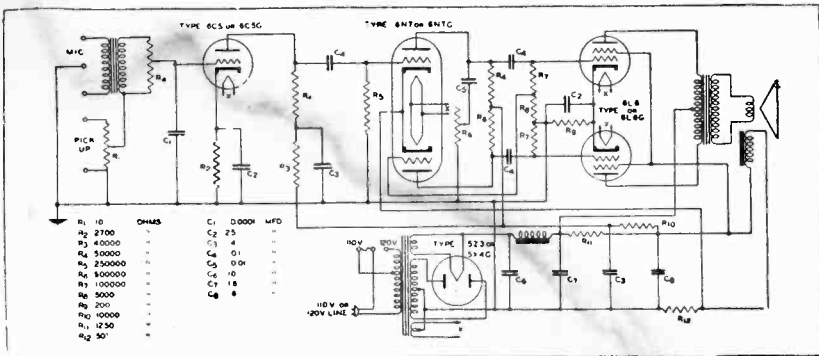
See Page 45



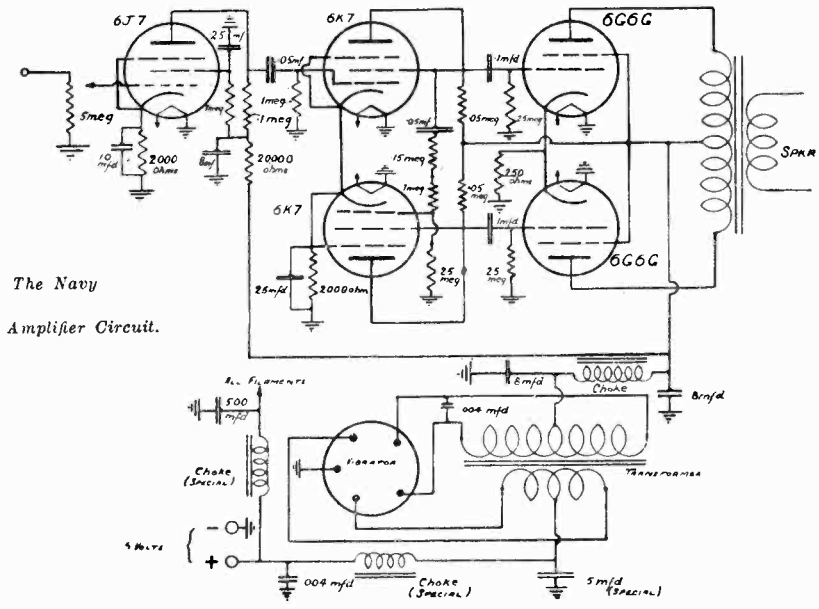
SYLVANIA TYPICAL AMPLIFIER, with Push Pull Pentode Output.



SYLVANIA TYPICAL 6-VOLT PORTABLE AMPLIFIER.

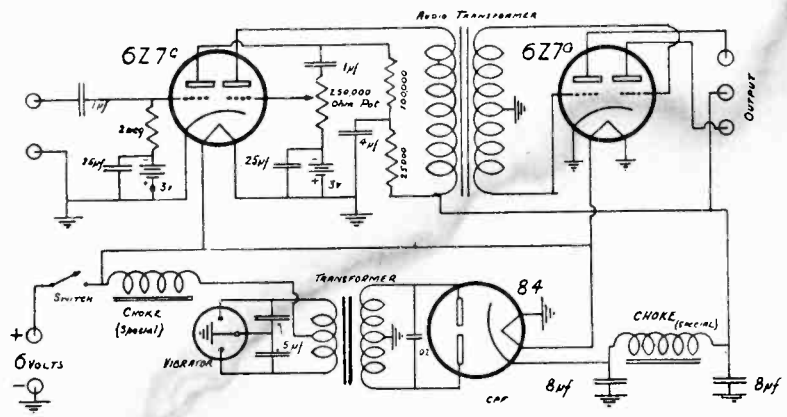


SYLVANIA TYPICAL AMPLIFIER.
With Phase Inverter and Push Pull 6L6 Output.

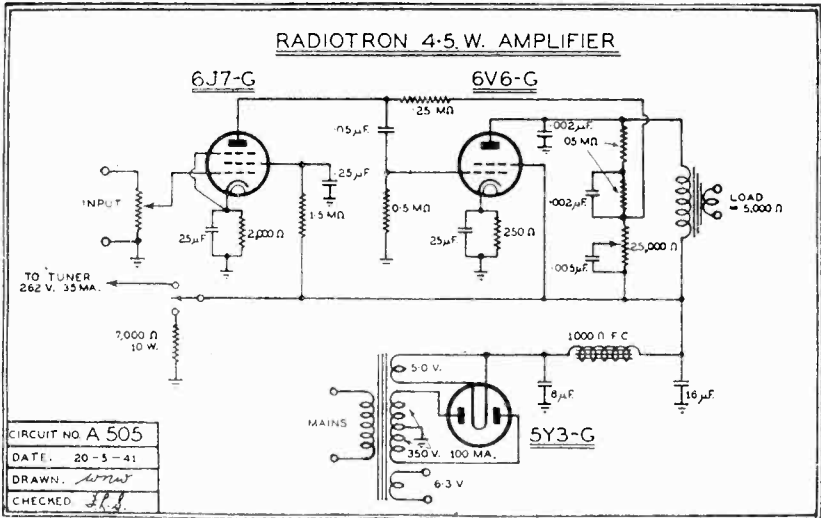


The Navy
Amplifier Circuit.

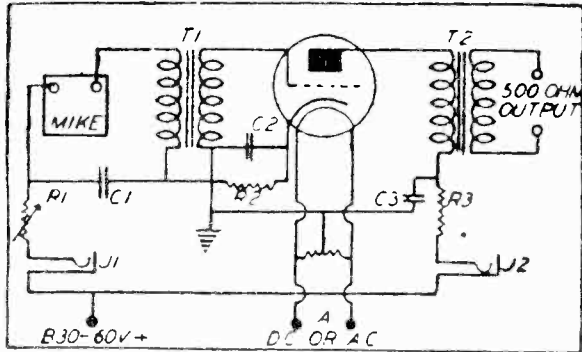
NAVY HIGH FIDELITY AMPLIFIER.
6-Volt Vibrator-Powered.



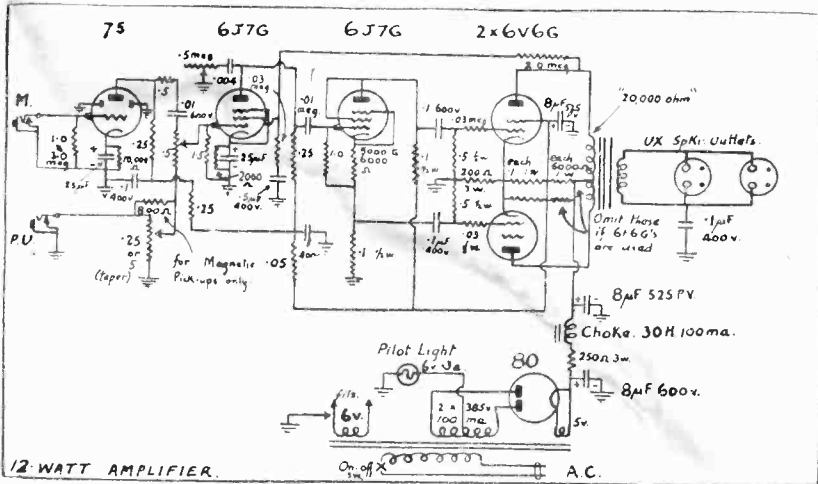
THE ACHILLES AMPLIFIER CIRCUIT.
Vibrator Powered.



Right—MICROPHONE AMPLIFIER.

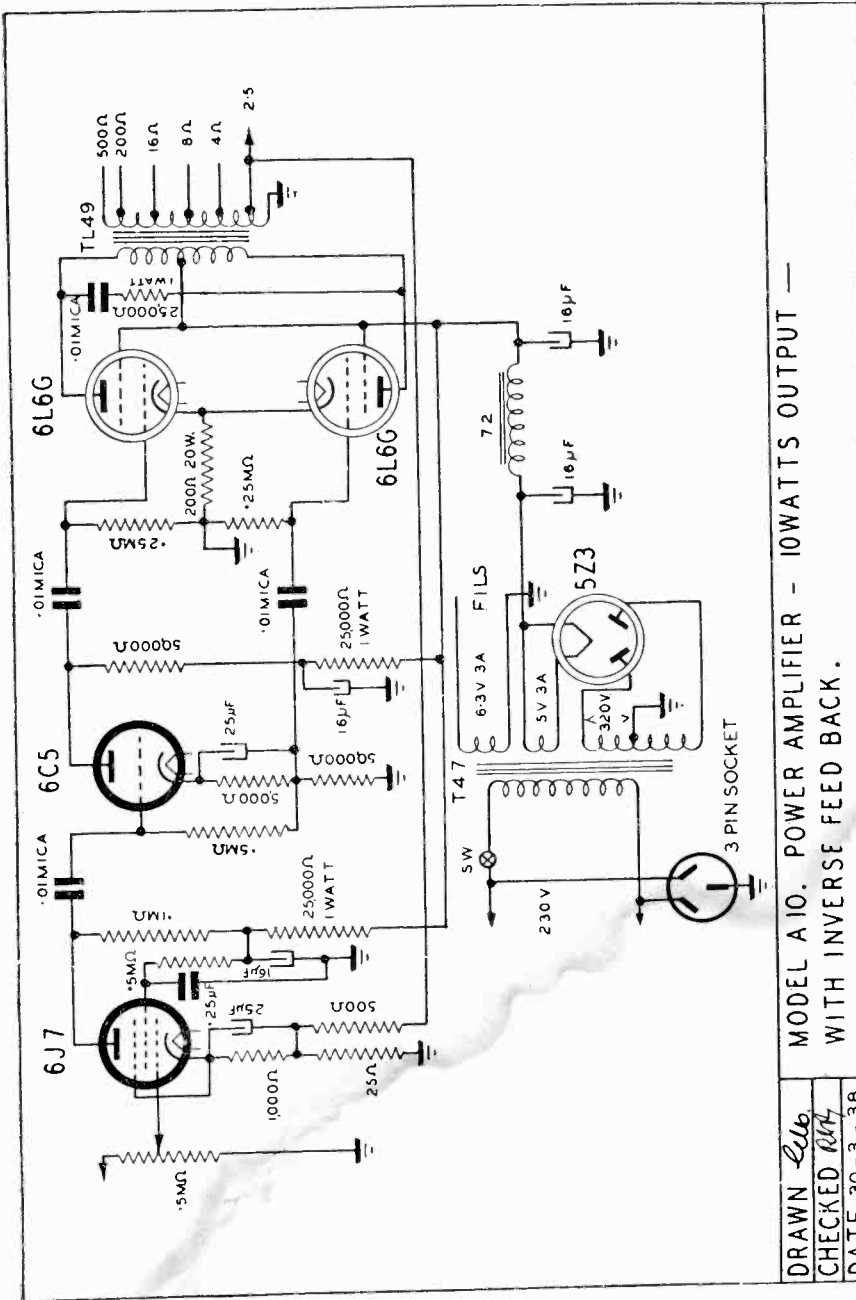


Below—12-WATT AMPLIFIER.



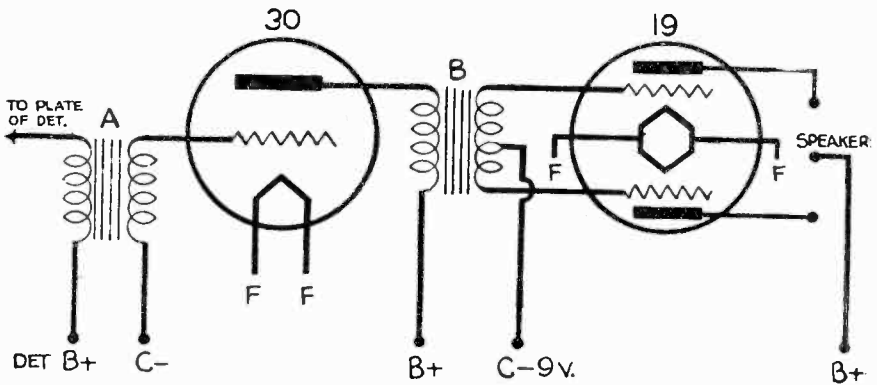
12 WATT AMPLIFIER.

EXELRAD 10-WATT AMPLIFIER.

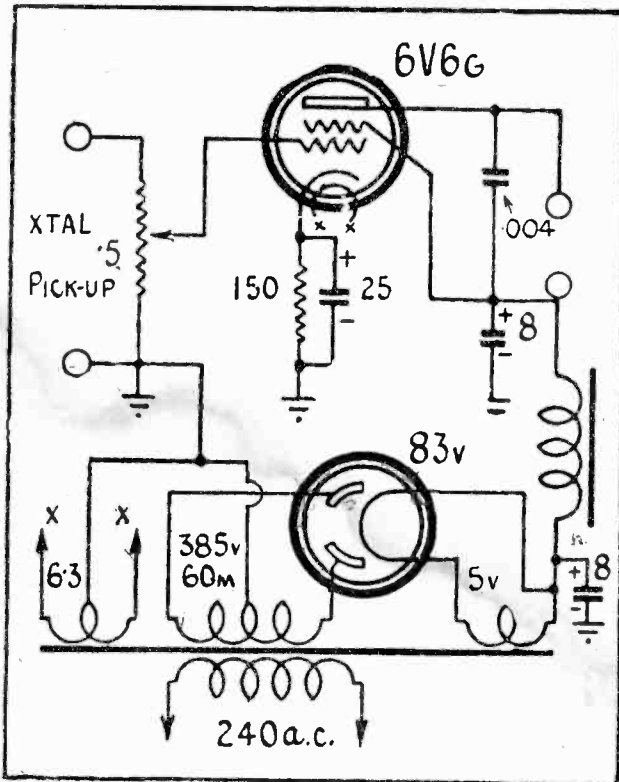


DRAWN *Elle*
 CHECKED *RAH*
 DATE 30-3-38

MODEL A10. POWER AMPLIFIER - 10WATTS OUTPUT -
 WITH INVERSE FEED BACK.



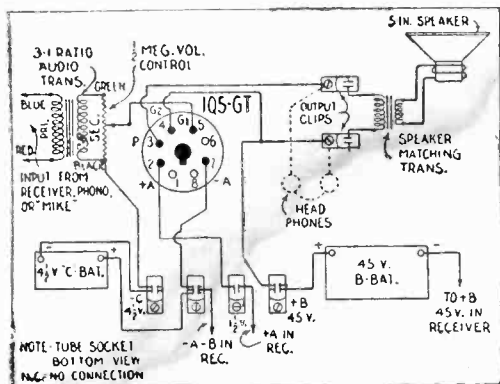
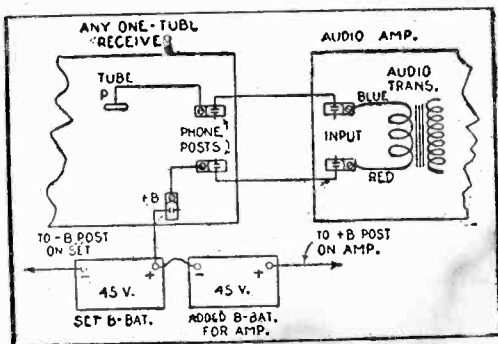
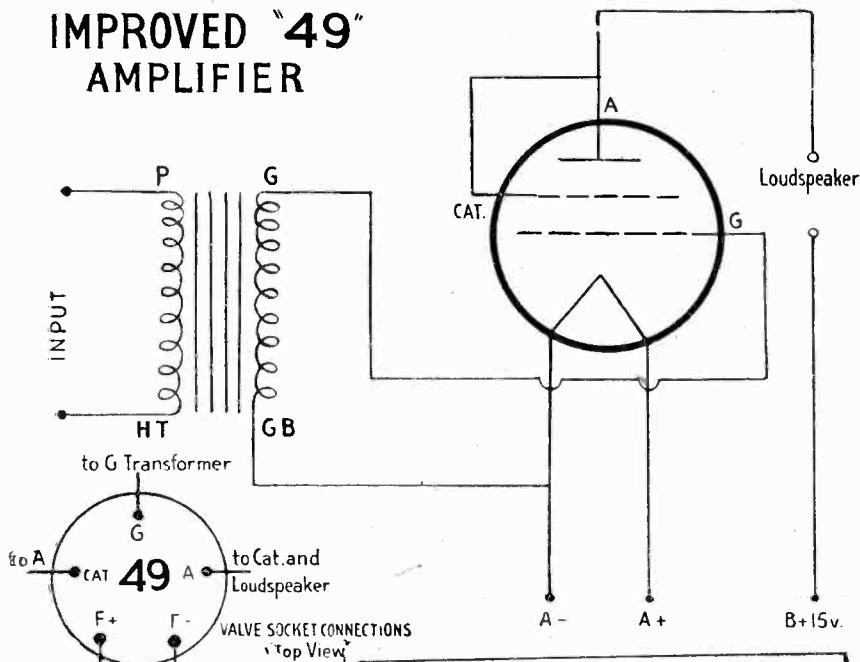
CLASS B AMPLIFIER FOR BATTERY SETS.



SINGLE VALVE GRAMOPHONE AMPLIFIER.

(Radio and Hobbies Circuit.)

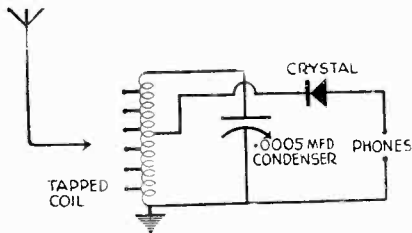
IMPROVED "49" AMPLIFIER



BEGINNER'S 1-VALVE AMPLIFIER.

CRYSTAL SETS

Here's an idea. Have a crystal set by your bedside. You can go to bed early and still listen to your favourite tenor and keep no one else in the house awake. Even if you do fall asleep there is nothing to hurt. You can have a lot of fun building up one of these circuits, or if you want a set already built turn to the Catalogue Section of this book.

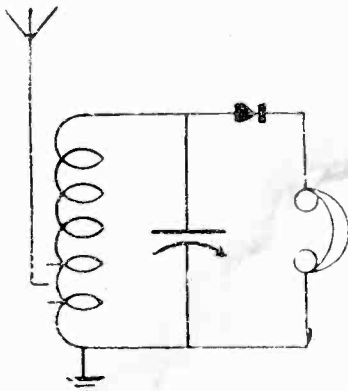


CIRCUIT 1.

Wind the coil first. This consists of 96 turns of 26 gauge DSC wire on a 1½ in. diameter former. Make a tapping at every 10th turn and an additional tapping at the centre of the coil (the 48th turn).

Mount all components on panel and base board.

Commence wiring as follows:—From the centre tap of the coil to the Crystal Detector. Aerial terminal connects to moving arm on switch. Each tap on coil is connected to one of the contact terminals on the switch. One end of the coil to the fixed plates of the variable condenser, the other end of the coil to earth. The moving plates of the variable condenser to one phone terminal



Circuit 2.

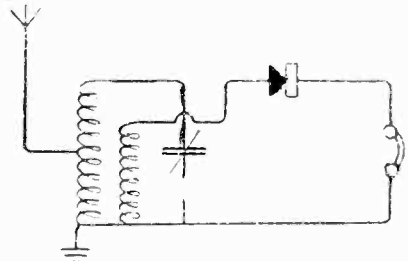
which is also connected to the earth terminal. The other phone terminal is connected to the remaining side of the crystal detector.

OPERATION.

By tuning the variable condenser and moving the switch on to the various contact studs you will soon find the best positions for your requirements.

CIRCUIT 2.

Coil.—About 60 turns 24 gauge DCC Wire on 3-in. former. Tap the 35th, 45th and 55th turn. Connect an alligator clip to a piece of flexible wire, the other end of the wire is fixed to the aerial terminal and the tapping selected by means of the clip.

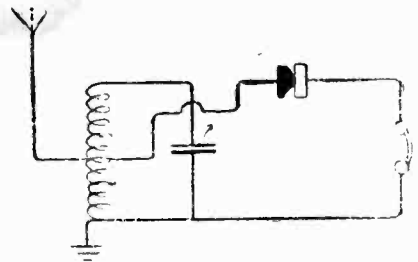


CIRCUIT 3.

Use the same type of coil but the aerial is brought into a centre tap and the lead to the crystal is taken from the same point.

CIRCUIT 4.

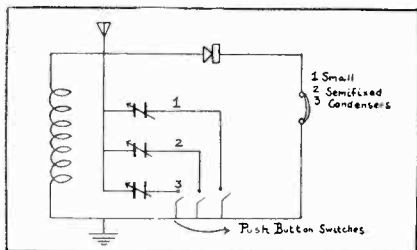
Wind coil as in previous circuits only leaving a small space between each turn. In these spaces wind on about 30 turns of 30 gauge DCC wire. This is the coil shown on the right hand side. After putting on the second winding, press up tight so that the windings touch. This circuit is quite selective.



Circuit 4.

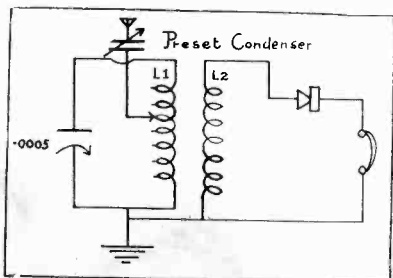
A NOVEL CRYSTAL SET.

A novel crystal set can be made incorporating push-button tuning in this way. Later the condensers can be adjusted to their station.

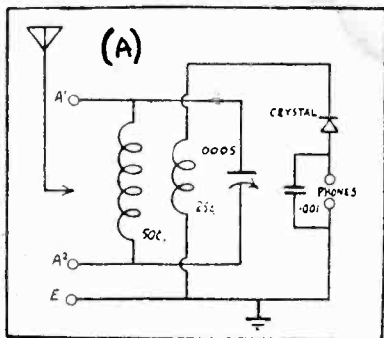


SELECTIVE CRYSTAL SET.

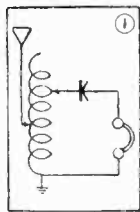
Here is the circuit of a Selective Crystal Set. The coil is wound with 24 or 26 gauge D.C.C. wire, and consists of 60 turns on a 3in. former, tapped at every tenth turn. The secondary coil (L2) is wound over the primary (L1) and consists of 40 turns of the same gauge wire. The tuning condenser could be of any capacity between .0003 and .0005. Experimenters will find that they will get good results with this circuit,—B.D.



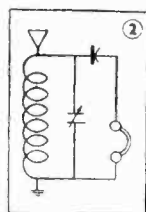
"17 STATION" CRYSTAL SET.



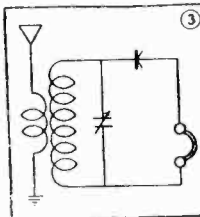
SIX CRYSTAL SET CIRCUITS.



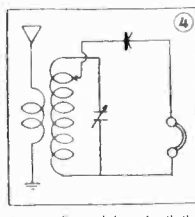
A double slider circuit



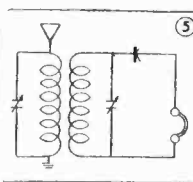
A straight-out crystal design



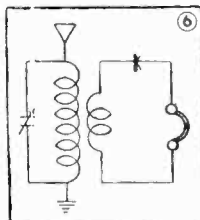
An aperiodic coupled aerial receiver



An aperiodic coupled aerial with the detector circuit coil optionally tapped

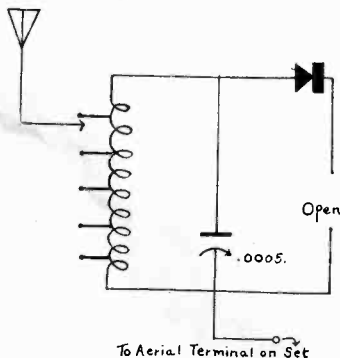


A two-condenser type employing a wave trap



A trap tuned crystal set.

SIMPLE CRYSTAL SET WITH TAPPED COIL.

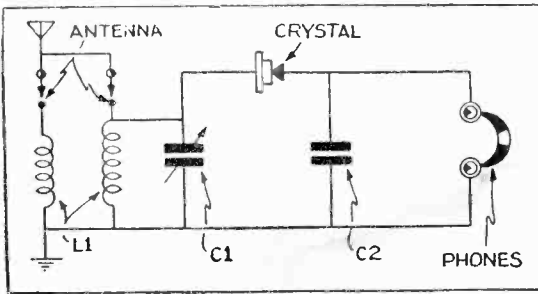
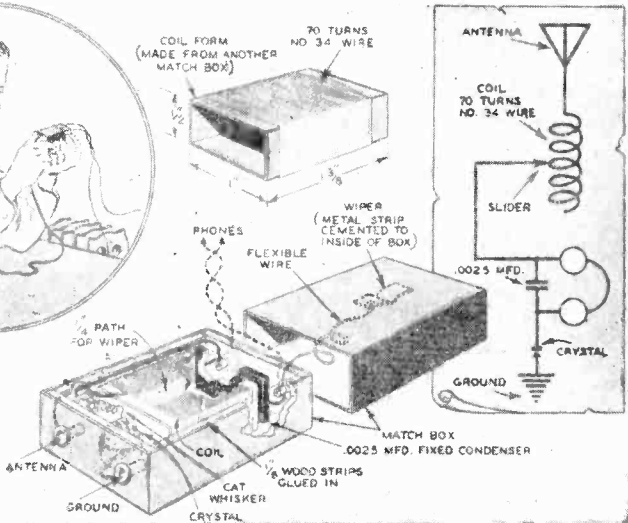




A MATCHBOX RADIO THAT ACTUALLY WORKS



This tiny radio receiver which has a 100-mile range is constructed in an ordinary safety match box. Tuning is accomplished by sliding the lid in and out. The pictorial diagrams are simple enough so that even those without radio experience can make the set. To insure good reception use earphones of 3,000 ohms resistance.



A SELECTIVE CRYSTAL SET FOR THE BEGINNER.

Here is a diagram for a simple fairly-selective Crystal Set that any beginner can easily build.

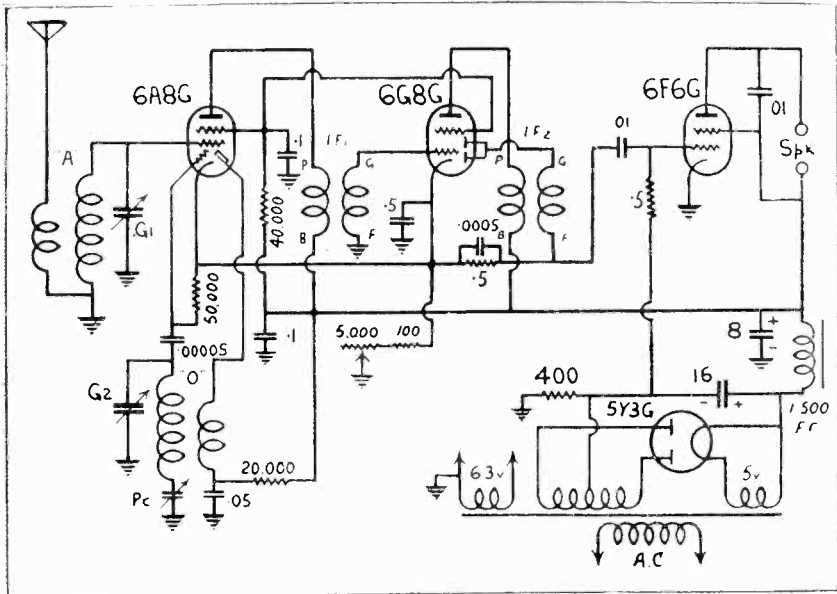
The Coil, L1, is a standard broadcast band R.F. coil, to be used with a 350 mmf. variable Condenser, C1. Notice that the primary and secondary are to be connected together at the ground end; the antenna may be connected to

either the primary or secondary, as shown.

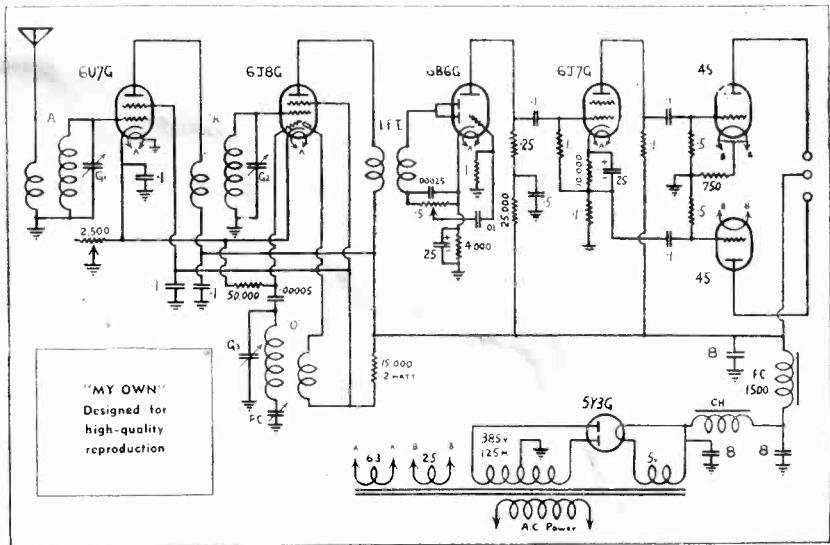
Use the set with a high antenna, at least 60 feet long, and be sure you have a good, sensitive pair of Phones.

- C1 = .00035.
- C2 = .0003.

A.C. SET CIRCUITS

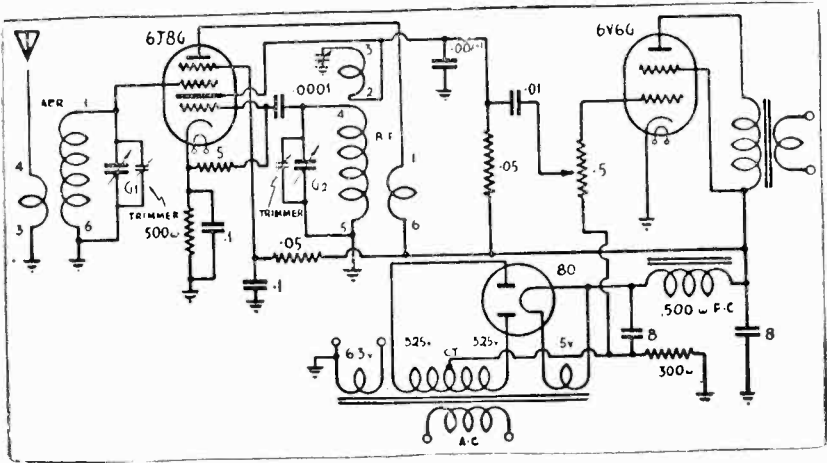


"AUSTRALIAN RADIO WORLD FOUR."

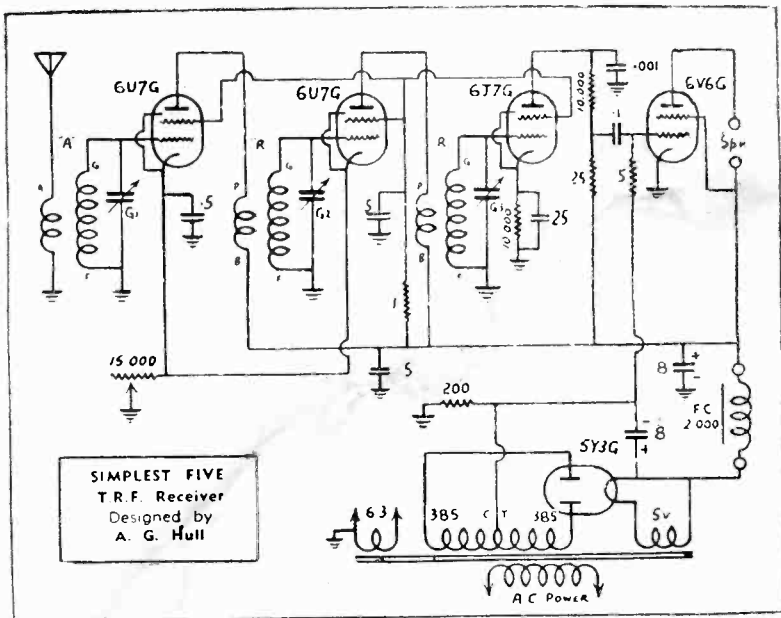


"MY OWN"
Designed for
high-quality
reproduction

MY OWN—"Australasian Radio World."



3-VALVE A.C. CIRCUIT.



AUSTRALASIAN "RADIO WORLD" CIRCUIT.

6/- JOIN THE 6/- N.Z. RADIO HOBBIES CLUB

Here are some of the Club's activities:

OBJECTS: The Club was founded in 1930 with the sole object of fostering Radio as a hobby.

SUBSCRIPTION: An annual subscription of 6/- is charged to members, for which they receive the following benefits:—

REGISTRATION CARD: Each member is supplied with a Registration Card showing his Club number, etc.

BADGE: A neat Badge is supplied to every member.

RADIOGRAM: The Radiogram, which is the Club's monthly paper, is full of interesting Radio reading, and each member receives a copy monthly.

LAMPHOUSE ANNUAL: Each member receives a copy of this 200-page Radio Book without further charge.

TECHNICAL SERVICE: Members may write to Headquarters and obtain advice on their Radio or any Radio subject.

ADVERTISEMENTS IN RADIOGRAM: Members are encouraged to place advertisements for buying, selling, or exchanging Radio parts, etc., at a special advertising rate.

CLUB STATIONERY: Suitably headed Club Stationery is available to members.

RADIO ADVISOR: The Club has appointed special advisors on DX problems and Radio Students' problems, and many Club members take advantage of this special service.

LITERARY EFFORTS: Members are encouraged to write articles on any Radio subject, and particularly good efforts which are published in the Radiogram are paid for.

BRANCHES: The Club has branches in various districts, and members may take part in the local organizations for the improvement of their Radio knowledge, and social activities.

THE NAME 'RAHOB': Members of the Club are called 'Rahobs,' the name being coined from the first syllables of 'RADIO' and 'Hobbies.'

COMPETITIONS: Competitions for Club members are held from time to time, and particulars of these are given in the Radiogram.

PHOTOGRAPHIC RECORD: The Club has a photographic record, which creates much interest.

Further and new activities are constantly being planned for Club members. Join now. Use the subscription form over-leaf.

THE RADIOGRAM

The circuits in this book have been compiled from articles, etc., which have appeared from time to time in the monthly Radio journal, the "N.Z. Radiogram." You can subscribe to the "Radiogram" for 6/- per annum, and you will receive your "Radiogram" regularly each month, by post. Circuits and articles on how to obtain better reception, Overseas Station Logs, technicalities, Radio Construction, and a host of other invaluable Radio subjects are regularly featured in the "Radiogram."

What is more, subscription to the "Radiogram" entitles you to membership in the Radio Hobbies Club (see reverse side for further particulars). You will also receive a copy of the Lamphouse Annual without further charge. Surely a good 6/- worth! Send your subscription now!

To the Editor, "N.Z. Radiogram,"

11 Manners St., WELLINGTON, C.I.

I enclose 6/- for subscription to the "Radiogram," which entitles me to membership with the Radio Hobbies Club and a copy of the Lamphouse Annual without further charge.

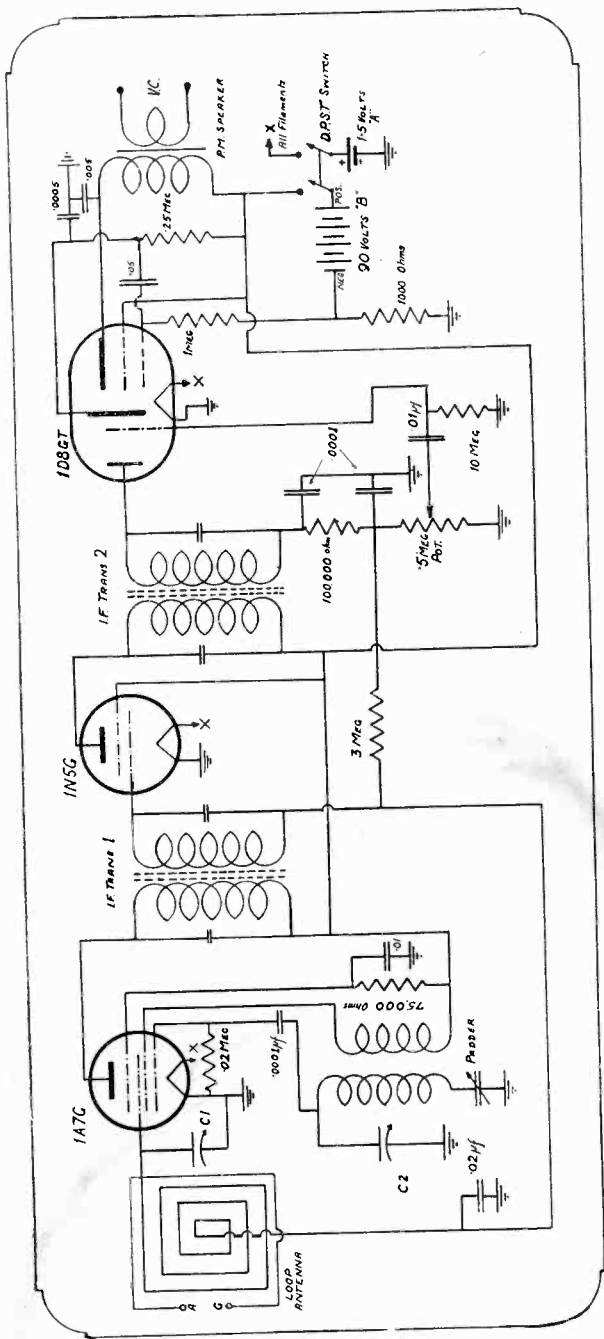
NAME

ADDRESS

TOWN

(Radio Circuits)

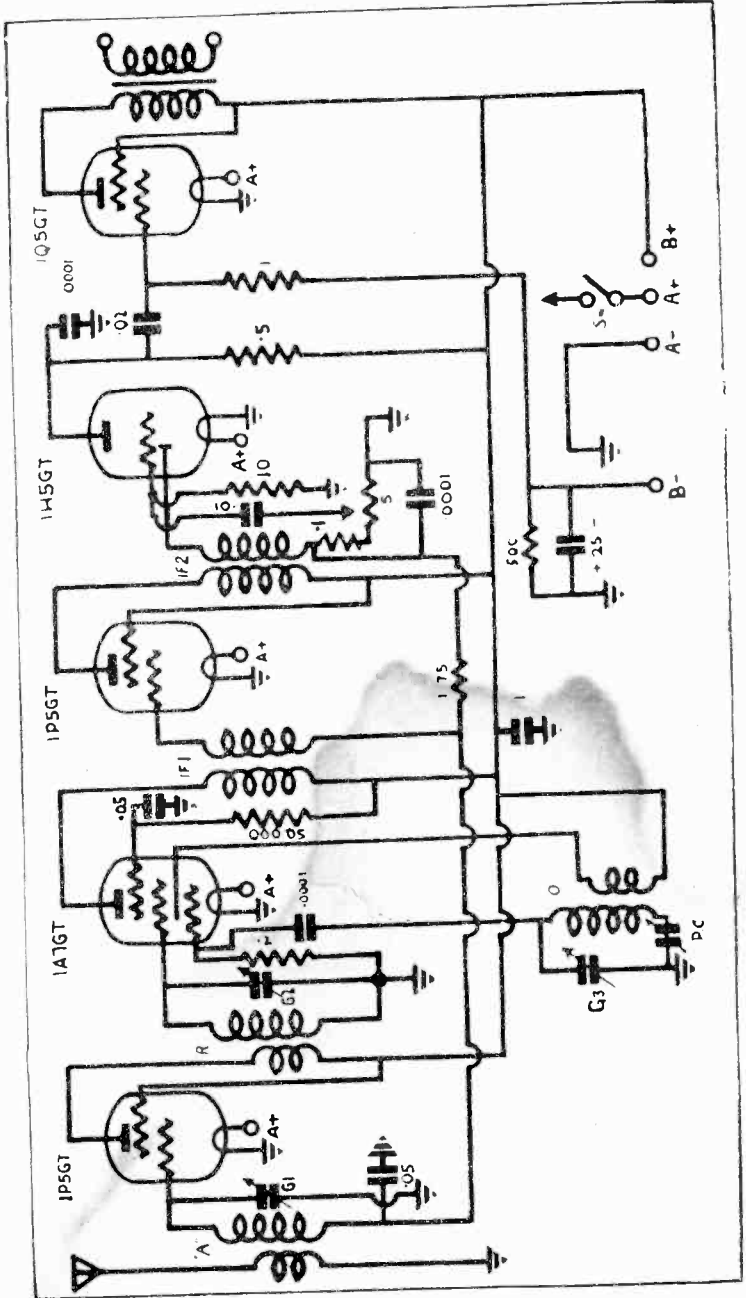
If you do not want to cut this book, write a letter.

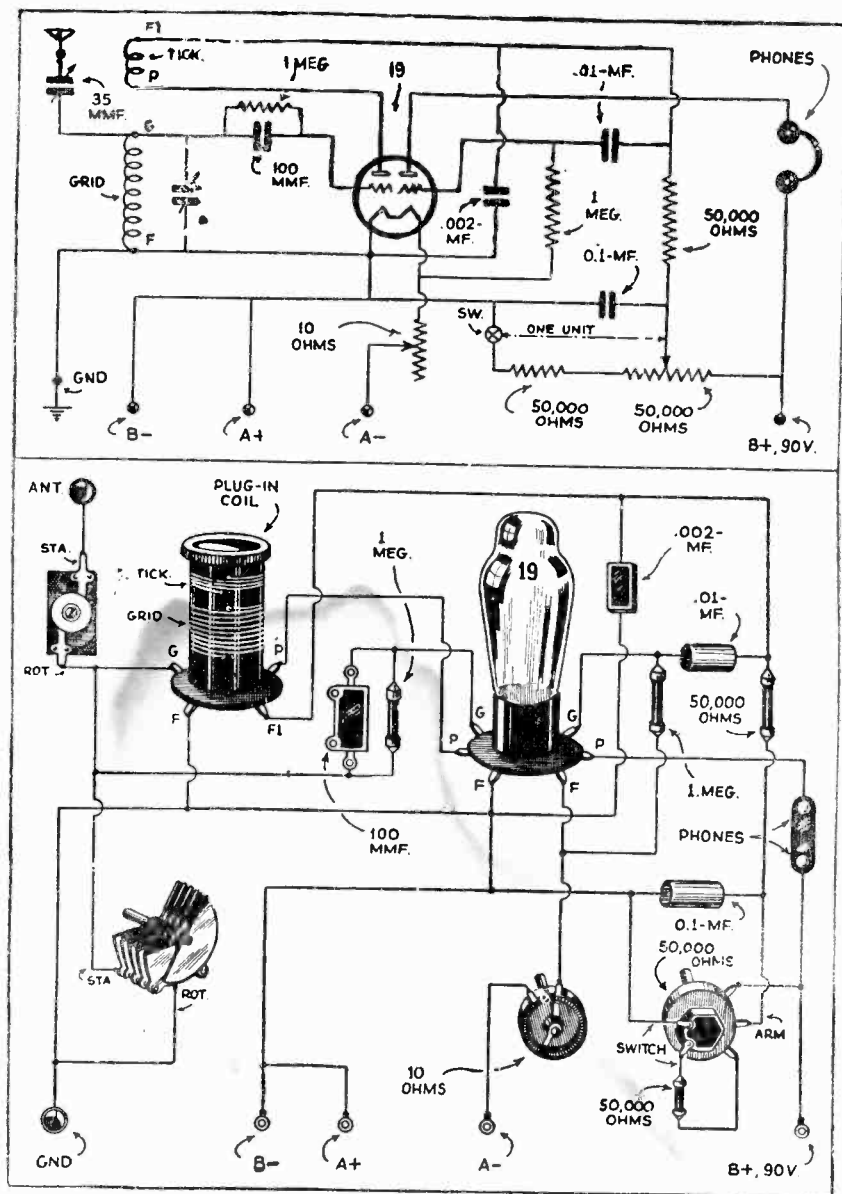


THE OUTDOOR PORTABLE.

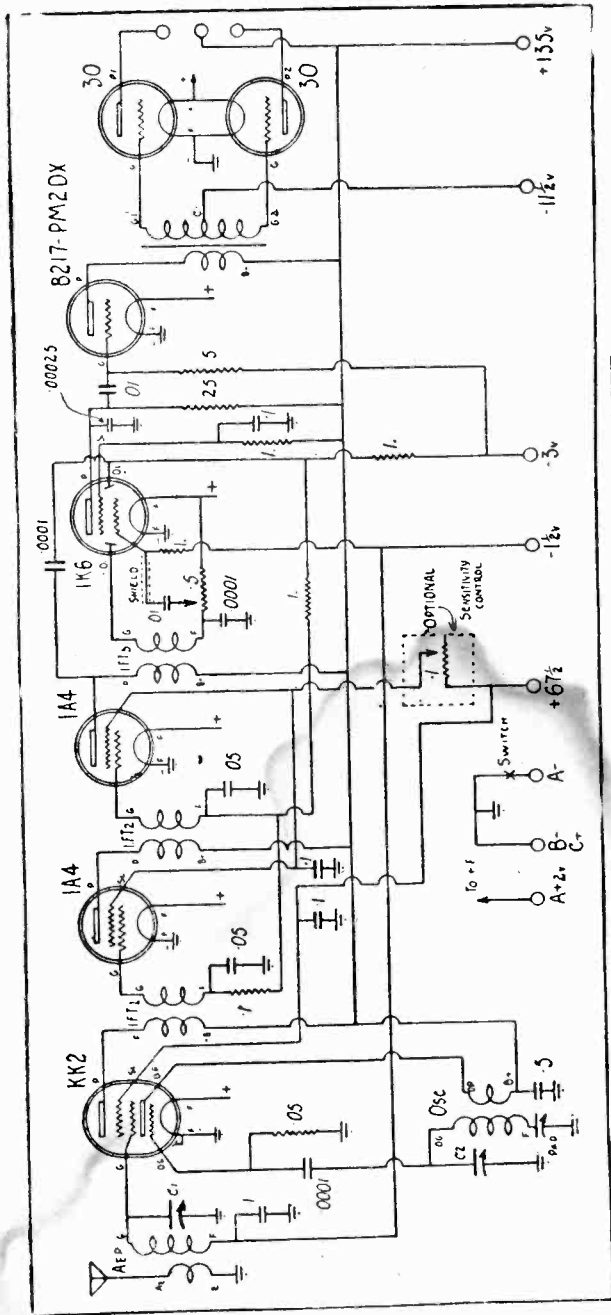
THE XMAS PORTABLE—An "Australasian Radio World" Circuit.

This circuit diagram is printed in response to many requests for a first-class 5-valve portable circuit.

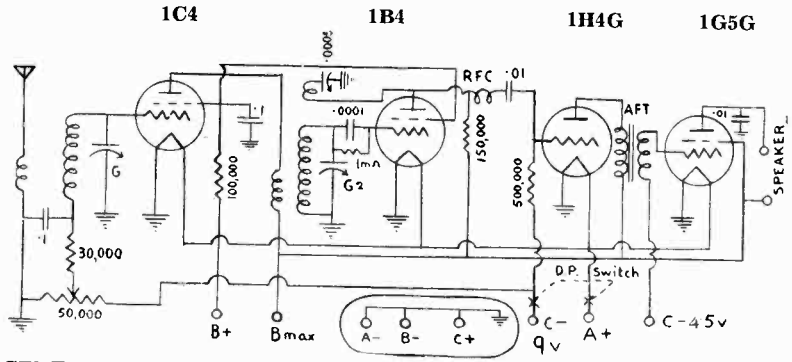




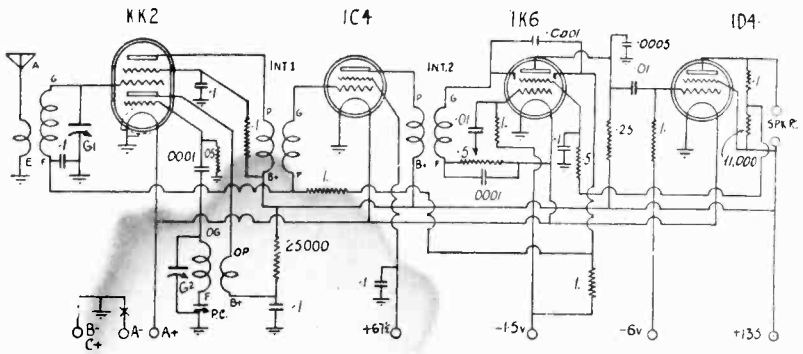
CIRCUIT AND PICTURED DIAGRAM OF THE DUODYNE ONE.



PENTAGRID SEVEN—A POWERFUL BATTERY SET.

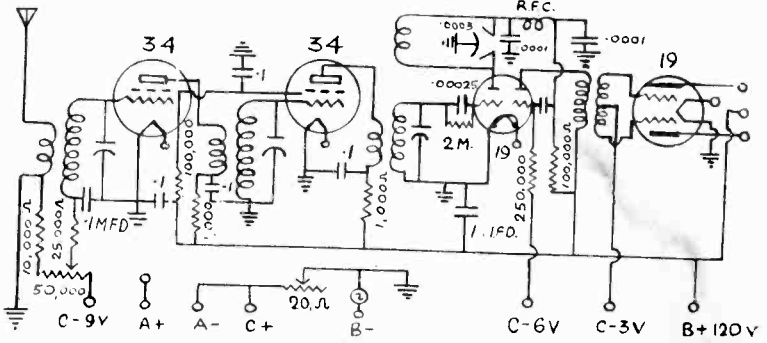


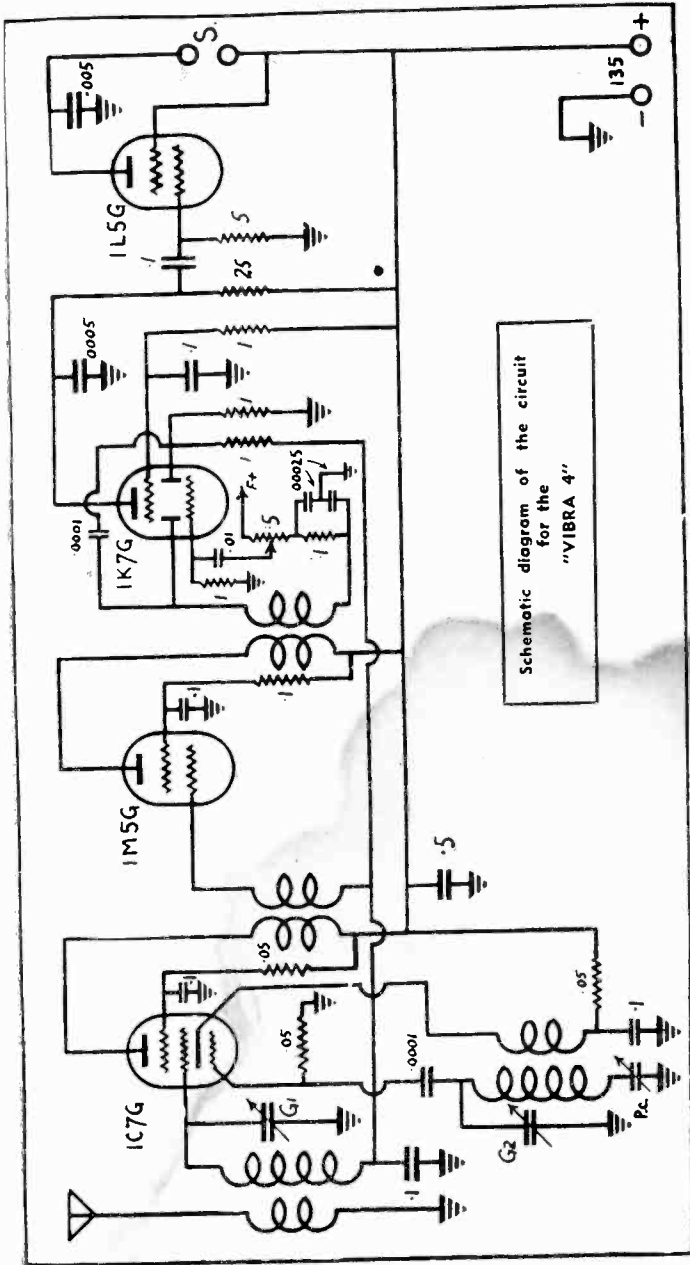
CENTENNIAL BATTERY SKYSWEEPER—4-VALVE T.R.F. CIRCUIT.



PENTAGRID FOUR—4-VALVE BATTERY CIRCUIT.

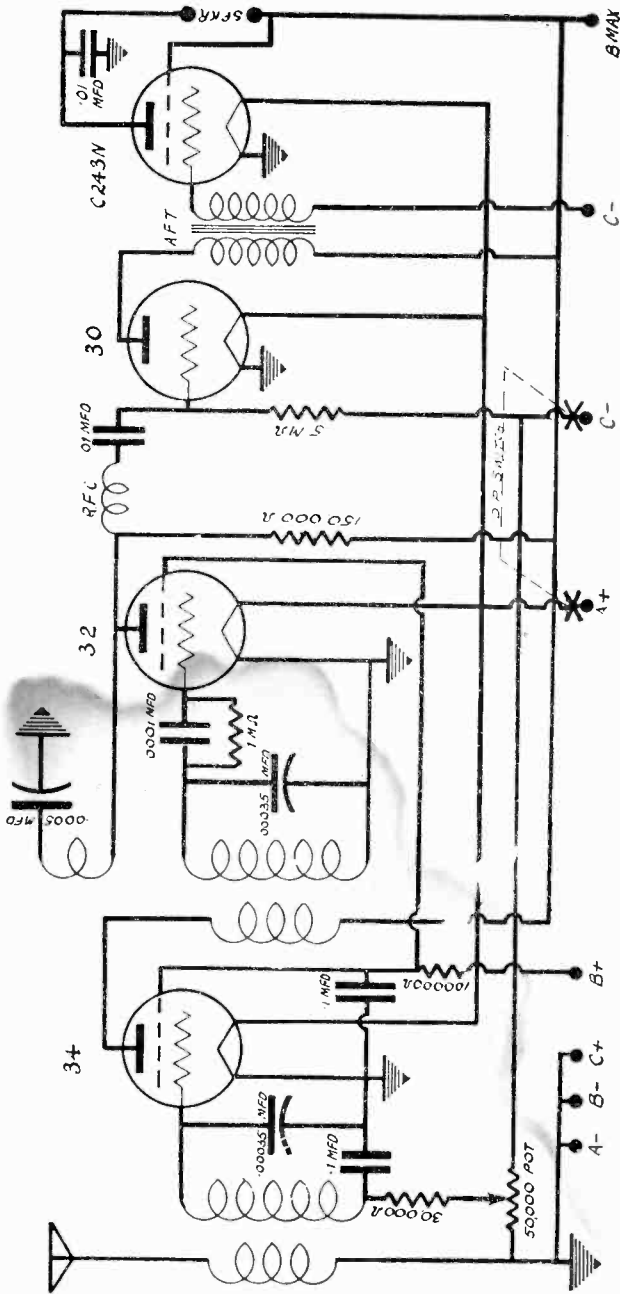
4-6 BATTERY RADIO



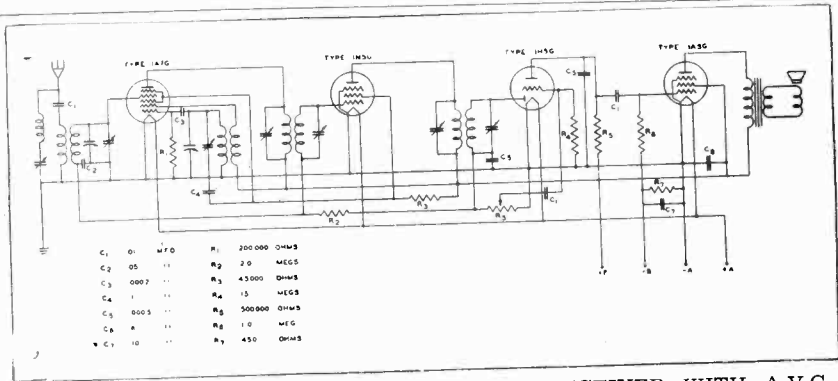


"VIBRA 4"

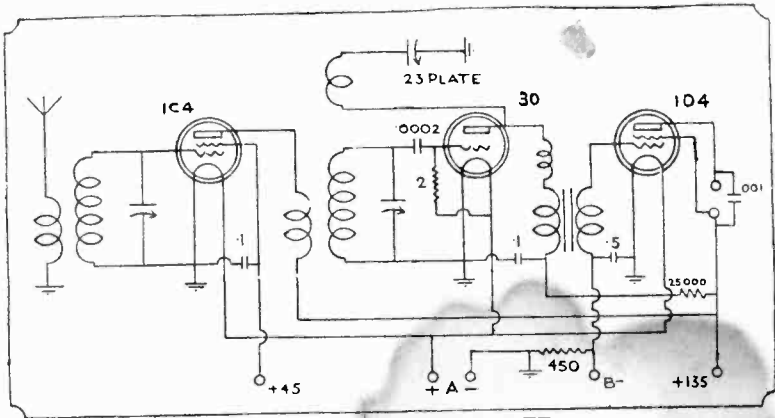
Here's an excellent circuit of a four-valve set for use with a vibrator.—"Australasian Radio World."



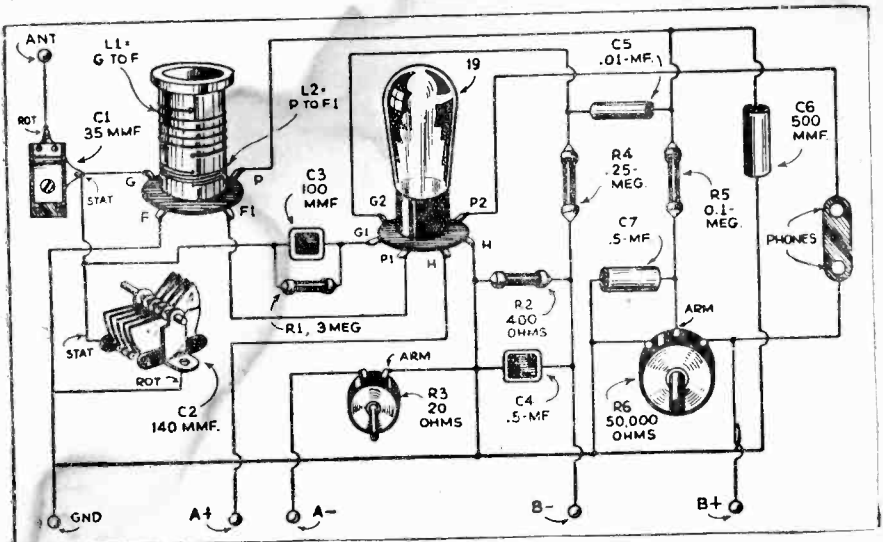
A 4-VALVE T.R.F. CIRCUIT—THE 1938 BATTERY SKYSWEPPER.



SYLVANIA TYPICAL 1.4 VOLT BATTERY RECEIVER WITH A.V.C.

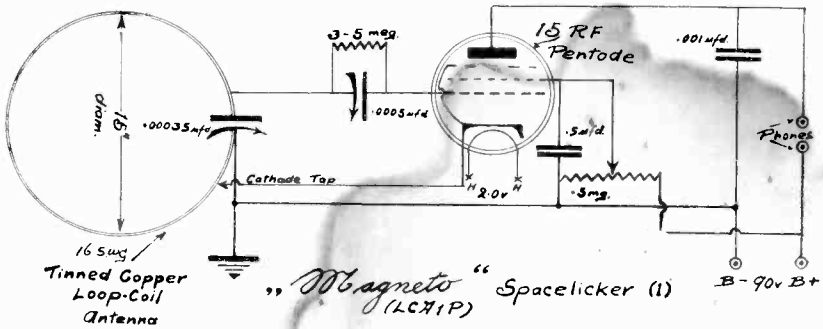
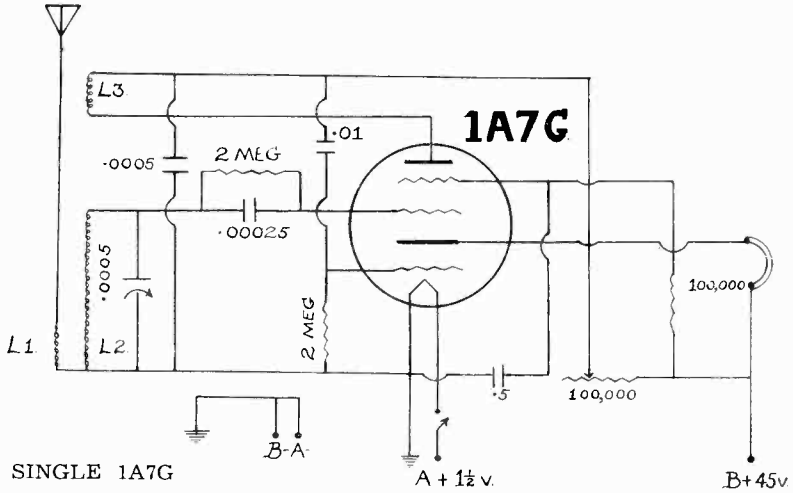


AIRWAYS STRAIGHT THREE.



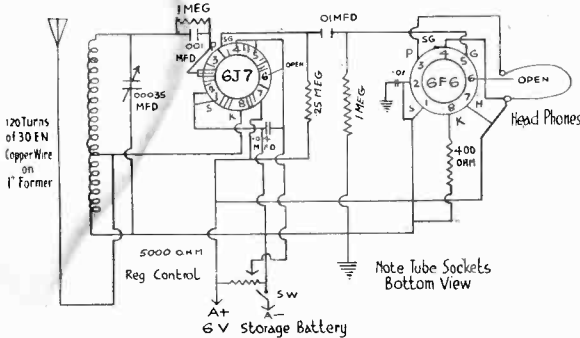
SINGLE 19 RECEIVER.

SMALLER BATTERY SET CIRCUITS

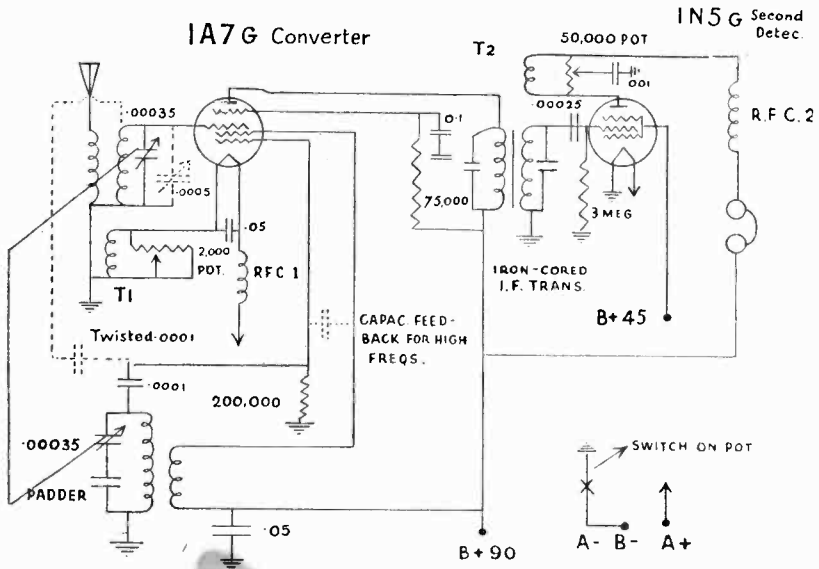


MAGNETO SPACE LICKER.

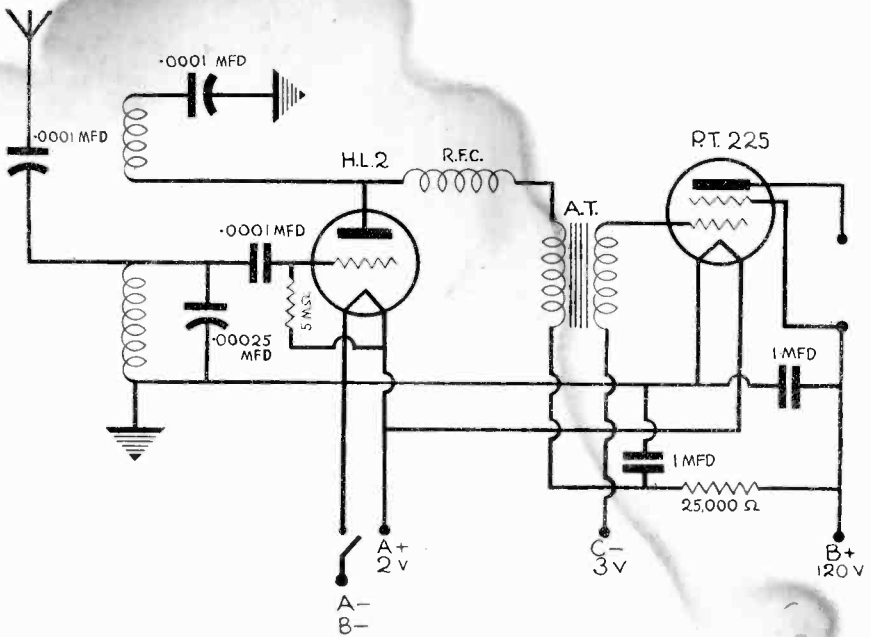
HURRICANE RECEIVER - A WONDERFUL PORTABLE SET



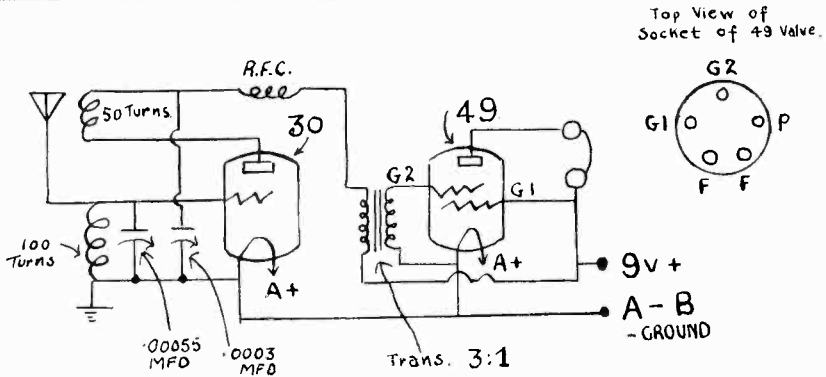
HURRICANE RECEIVER.



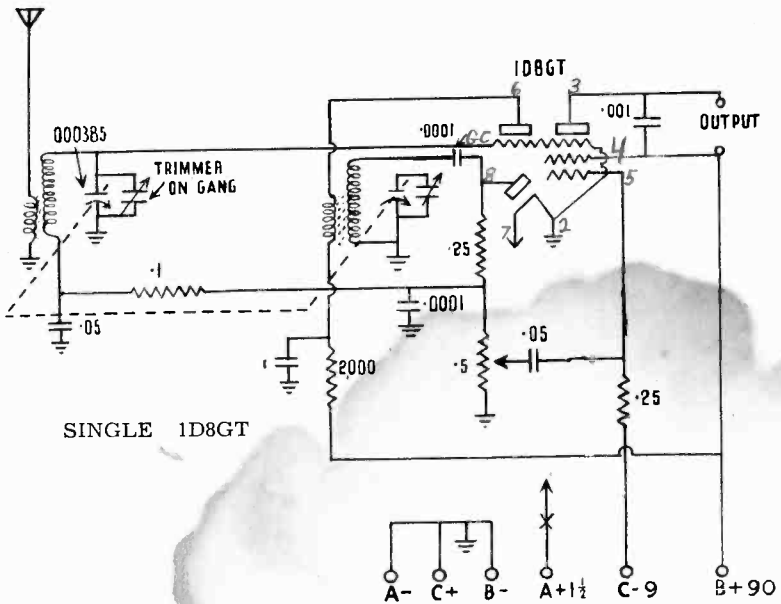
A GOOD TWO VALVER.



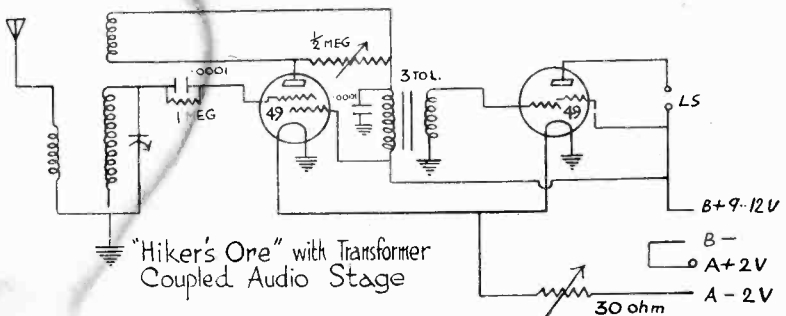
2-VALVER USING ENGLISH VALVES.



30-49 BATTERY SET.



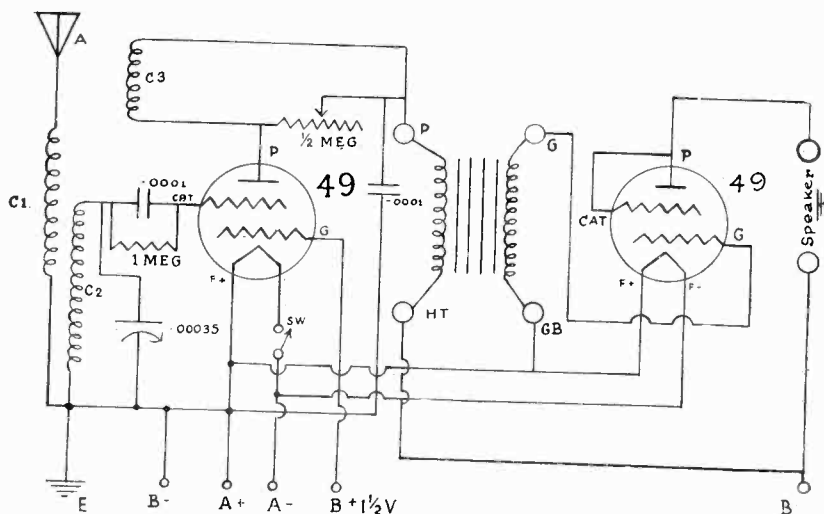
SINGLE 1D8GT



"Hiker's One" with Transformer Coupled Audio Stage

HIKER'S ONE WITH AUDIO STAGE.

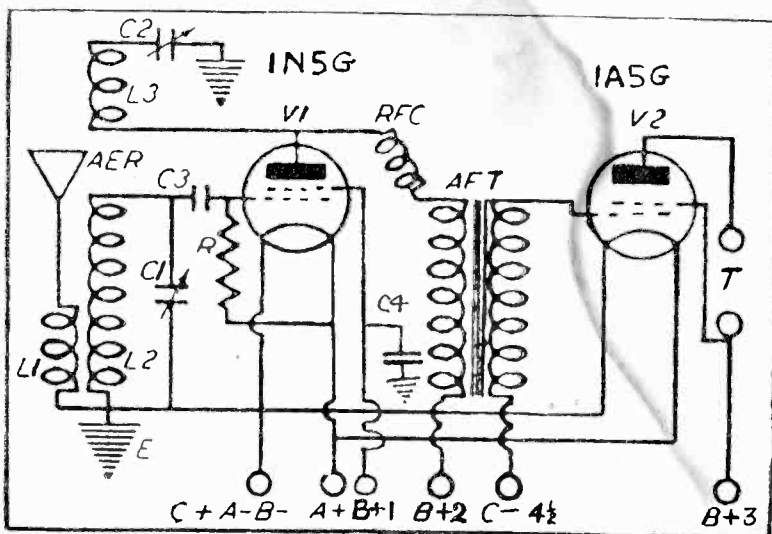
"DUAL WAVE HIKER'S TWO"

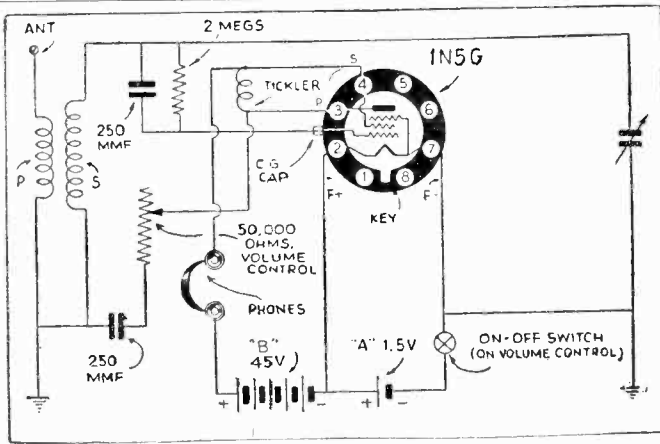


"DUAL WAVE HIKER'S TWO."—By E. Bonica.

It is the same as the "Hiker's One" and the "49" amplifier on the same chassis, using plug in coil and plug in battery. The B.C. coil is the same amount of turns wound on a five-pin coil former. The "S.W." coil is the same diameter former but using gauge 26 D.C.C. C1. has 5 turns, C2. has 25 turns, C3. has 10 turns.

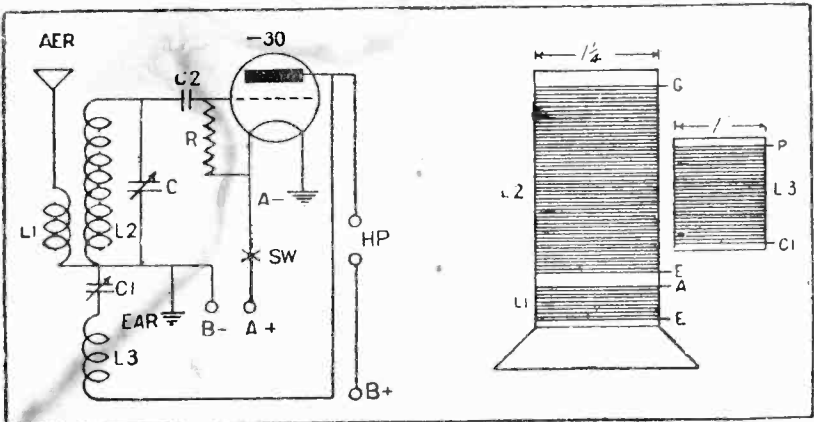
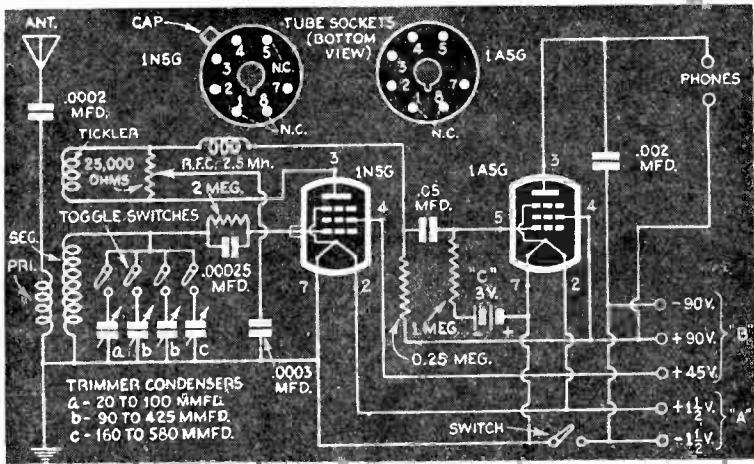
THE DRY CELL TWO—"Listener-in" Circuit.



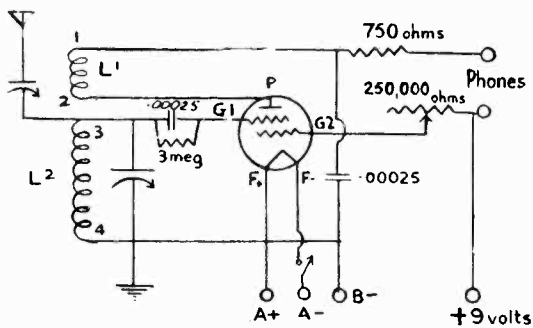


At Left—
RAHOB
SINGLE

Below—
PUSH
BUTTON
TWO
CIRCUIT.

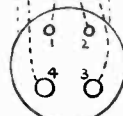
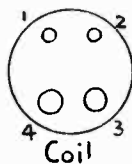
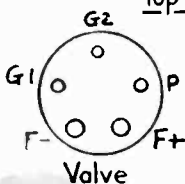


CIRCUIT AND COIL DIAGRAM FOR THE "ONE-DER."
L1 — 10 turns. L2 — 100 turns. L3 — 30 turns.



Short Wave Hikers

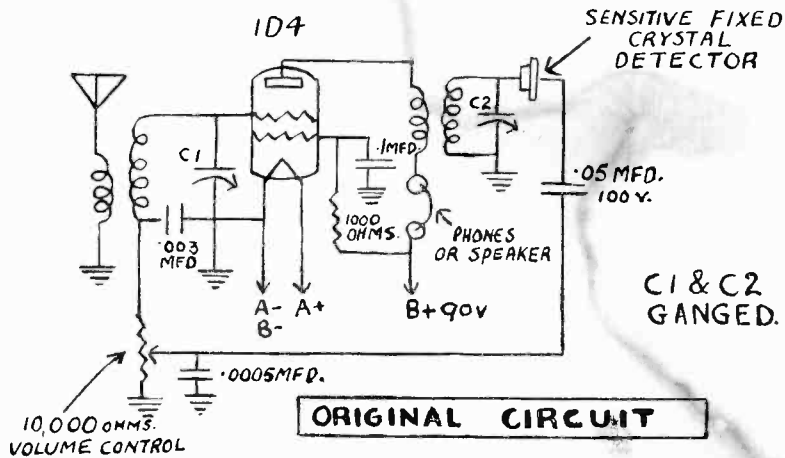
Top Views



Coil Connections

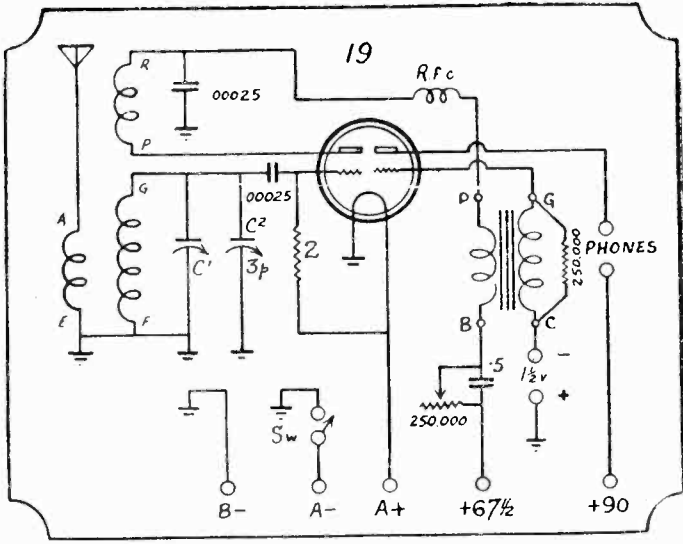
SHORTWAVE HIKER'S.

REFLEX PENTODE 1

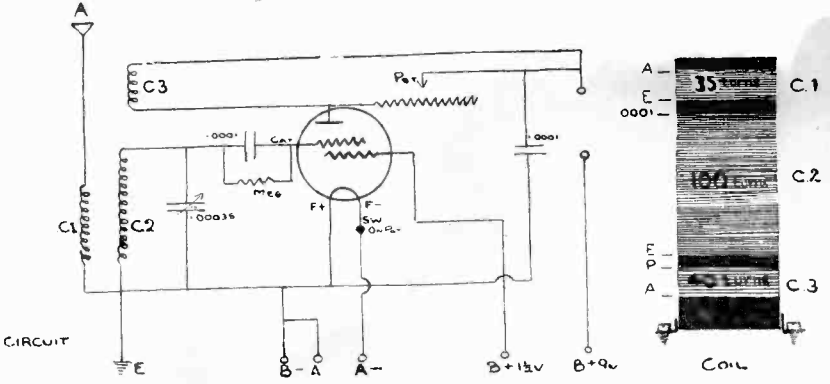


ORIGINAL CIRCUIT

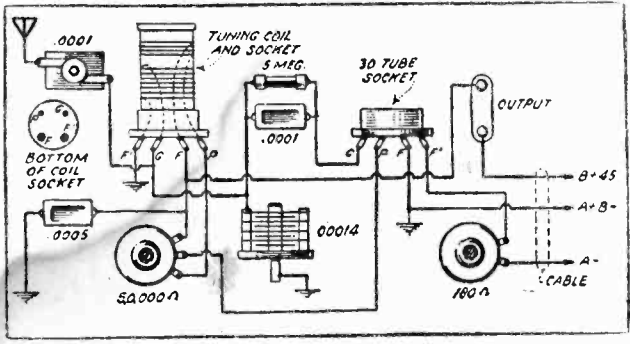
REFLEX PENTODE ONE.



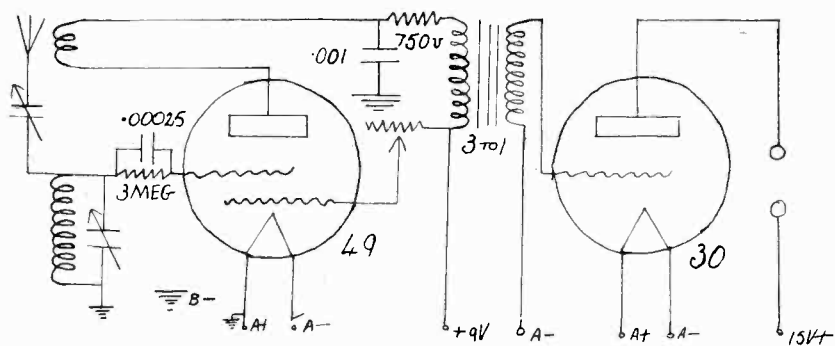
ALL WAVE DUPLEX SINGLE.
Single Valve All Wave Battery Circuit, using plug-in coils.



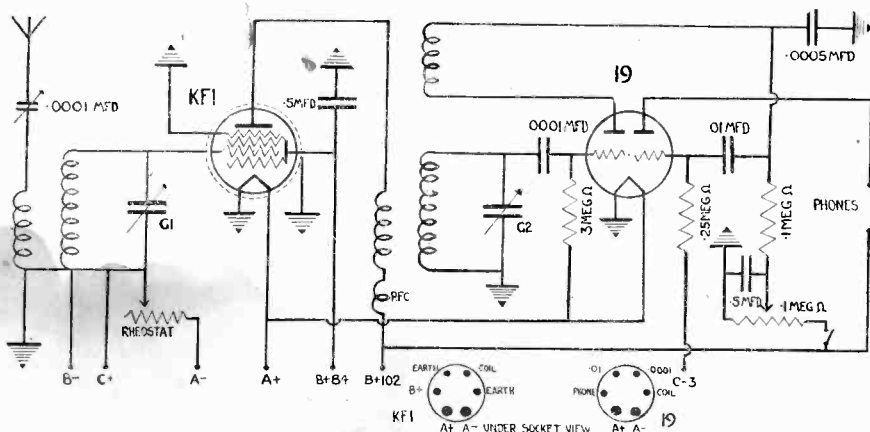
IMPROVED HIKER'S ONE" CIRCUIT.



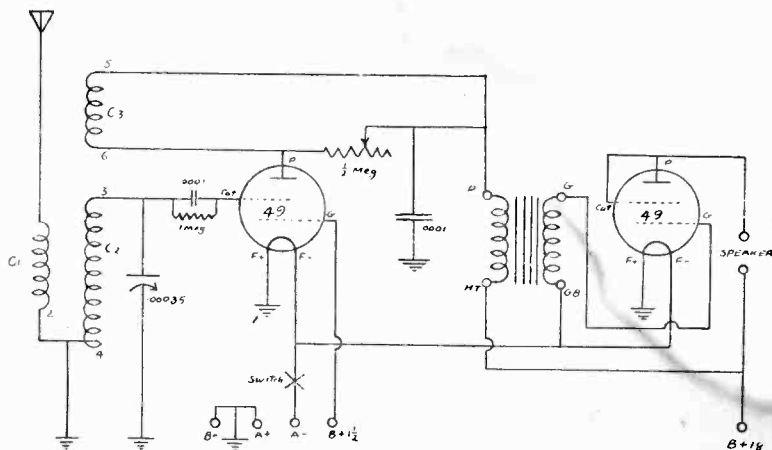
THE TROOPER ONE.



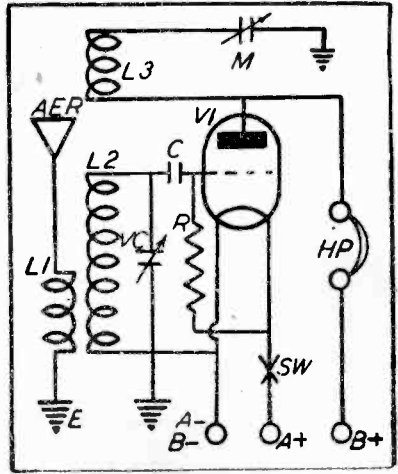
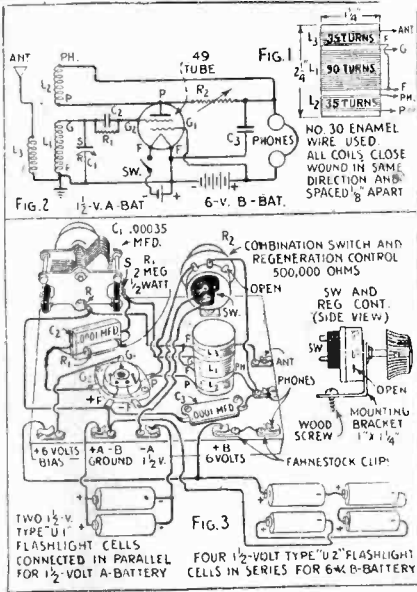
49-30 CIRCUIT.



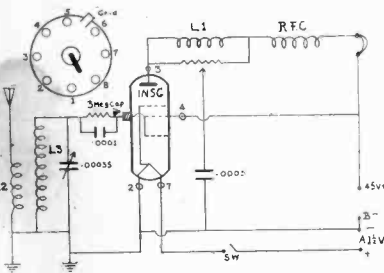
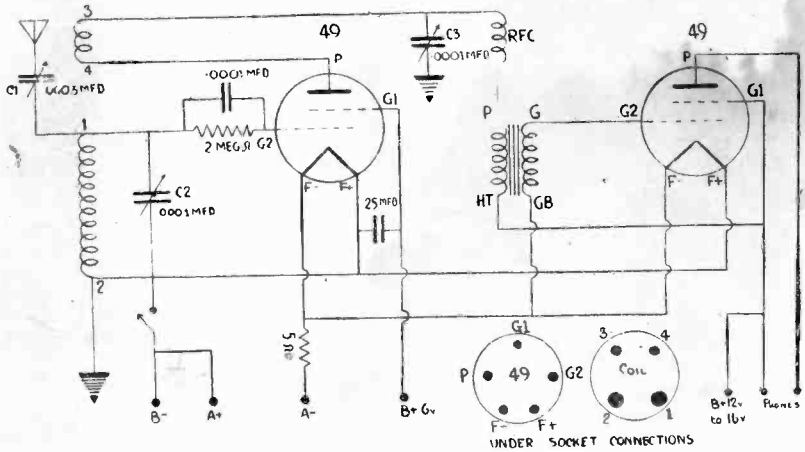
ALL STAR TWO.



HIKER'S TWO CIRCUIT.



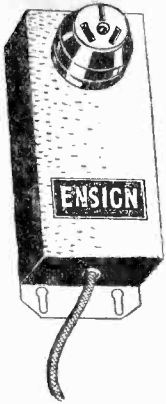
THE HIKER'S ONE.





Man Made Interference!

with
ENSIGN
LINE FILTERS



Besides being picked up by the aerial system, man-made static can also come over the A.C. power mains.

We must decide whether the man-made static, which is proving so troublesome, is being picked up by the aerial or is coming over the power lines or both. A good test is to tune the set to a point where the noise is particularly bad and turn the volume control well up. Now remove the aerial wire and attach it to the earth terminal, but do not remove the earth wire. The effect will be to reduce the noise level, but if the man-made static continues to be very severe you will at once know that at least portion of the interference is coming over the A.C. power mains, and you will at least need an Ensign Line Filter before you can overcome the trouble. On the other hand, if the noise is entirely eliminated you will know that the noise is being picked up by the aerial and some form of noise-reducing aerial will be required.

Designed for use with electrically operated radio receivers. Simply fits between the receiver and the wall plug. It will definitely stop all man-made static entering through either A.C. or D.C. Mains. Particularly successful in D.C. and on ships with D.C. generators.

Cat. No. VA298

19/6

THE ELECTRIC LAMP HOUSE LTD.
11 MANNERS STREET - - WELLINGTON

HAYMAN'S INFRA RED MEDICAL LAMPS

As supplied to the Auckland Hospital Board and many other hospitals throughout New Zealand. These Lamps allow you to obtain exactly the same Infra Red treatment as given in many of the leading hospitals. Specially designed for use in Hospital Massage Departments, Surgeries, Clinics, Convalescent Homes, Institutions, and in private homes.

SPECIAL FEATURES INCORPORATED ARE:

Infra Red Radiating Element, emitting genuine Infra Red Rays, specially designed for heavy duty performance and long life: tested and proved by medical experts.

Non-luminous type Element.

Special brightly polished reflector to give the right focus of rays to location under treatment.

Switch on bowl to control the Element without disconnection of Wall Plug or Light Socket.

Strong, quick-fixing swivel joints which hold the radiator down firmly in any desired position, vertical or horizontal, with a very wide range of movement.

Strong, heavy cast base prevents standard from falling over. Attractively finished in bright nickel-plating, and wrinkle-finish baked enamel.

Infra Red Ray treatment is recommended for Rheumatism, Sciatica, Neuritis, Gout, Neuralgia, Lumbago, Toothache, Earache, Sprains, Insomnia, Chilblains, Boils, Septic Sores, and for healing open wounds and lacerations. Ask your Doctor.

TREATMENT: Apply the Rays to the bare skin, keeping the bowl about 18 inches away, or according to the sensitiveness of the skin of the patient. The Rays should always be a comfortably strong warmth, and should never be allowed to be so close as to be unbearably hot. The Lamp should be adjusted to suit individual requirements.

Duration of treatment should be according to medical advice, but 20 to 30 minutes is usually long enough for the first treatment, 2 or 3 times daily, according to the ailment and measure of relief received. Longer treatments can be given when accustomed to the Rays.

Before commencing treatment, the patient should be made comfortable in a bed or chair so as not to be weary during the period of treatment.

Supplied complete with 4 yards of 3-core flexible and 3-pin Plug.

TABLE TYPE

Cat. No. VE86

£8/5/-

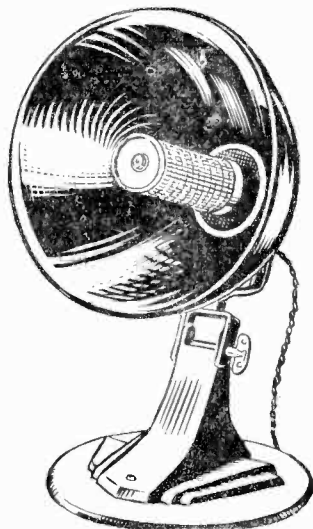
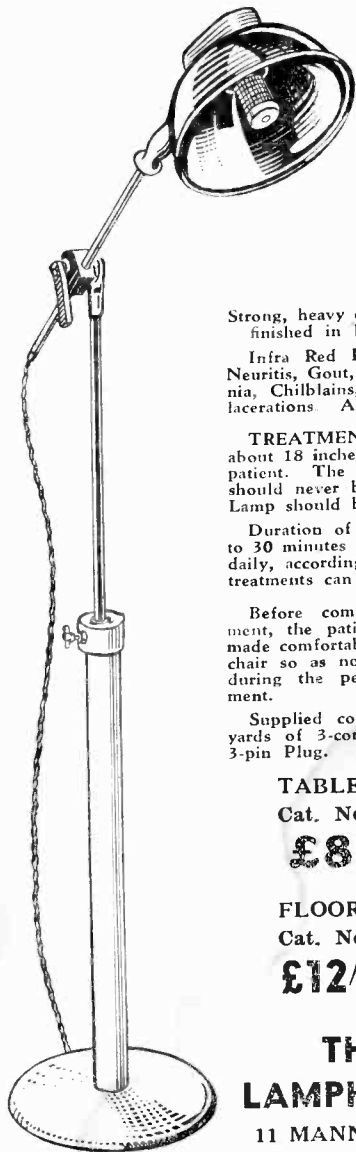
FLOOR TYPE

Cat. No. VE85

£12/10/-

THE LAMPHOUSE

11 MANNERS ST.,
WELLINGTON.



INSUVARN

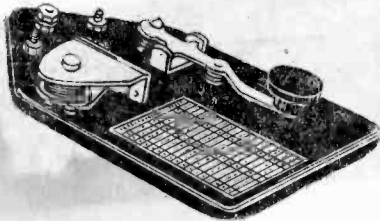
QUICK DRYING INSULATING VARNISH.

Fresh stocks just on hand. Insuvarn is a fast-drying moisture-proof Coil Dope. Painted over Coil windings it will hold them rigidly in place and prevent the atmosphere getting at the windings. Excellent for coating Coil Formers before they are wound, and for impregnating wood panels so as to ensure they do not absorb moisture. Insuvarn can also be used for mending Speaker Cones, and a hundred and one other Radio jobs requiring a first-class insulating varnish or cement.



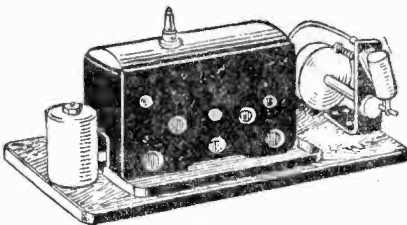
Insuvarn is also sold under the trade brand "Stucka" as a liquid glue, and can be used for mending Wood, Bakelite, China, Glass, etc., etc. Every serviceman and home experimenter should have a jar of Insuvarn on hand.
Cat. No. VU159 **2/3** jar

MORSE PRACTICE SET



British-made Morse Practice Set has Morse Code embossed on base. Stroke of key can be adjusted to individual requirements. Terminals are provided so that the Set can be used in conjunction with another set. Containing Key and Buzzer on One Base. Light Pattern. Measurements 4 1/2 in. long, 2 3/8 in. wide, 1 1/8 in. high.
Cat. No. VH110 **8/9**

MODEL STEAM ENGINE



Real working model for driving models, etc. Uses methylated spirits for heating. Safety valve provided. Limited quantity only available. Ideal present for boy.
Cat. No. VU3 **37/6**

THE LAMPHOUSE, 11 Manners Street, Wellington, C.1.

TEST PRODS

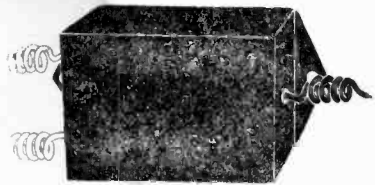


Polished ebonite handles and complete with flexible leads.
Cat. No. VMI **7/-** pair



Cat. No. VU1. **2/3** bottle

THE NOTENNA AERIAL ELIMINATOR.



Equally successful on both broadcast and shortwaves. Replaces aerials of all types. Very compact size. No lightning arrestor required. Reduces noise, interference and man-made static. Simply attached between aerial and earth terminals on your set and to earth wire. Money back if you are not more than satisfied. Dimensions 4 in. x 2 1/2 in. x 3 in.
Cat. No. VA310 **8/5**

ROBERTS RADIO SERVICE

417 KARANGAHAPE ROAD

PHONE 48-009

ROBERTS RADIO SERVICE

417 KARANGAHAPE ROAD

PHONE 48-009